Volume 1
Number 6
November 1988
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A Database Publication

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How to get there

By Underground: Nearest tube station is Hammersmith (Piccadilly, Metropolitan & District Lines).

By Bus: 266, 714, 716, 290, 30, 72, 73, 74.

Car parking facilities available at the Novotel.

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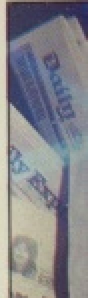
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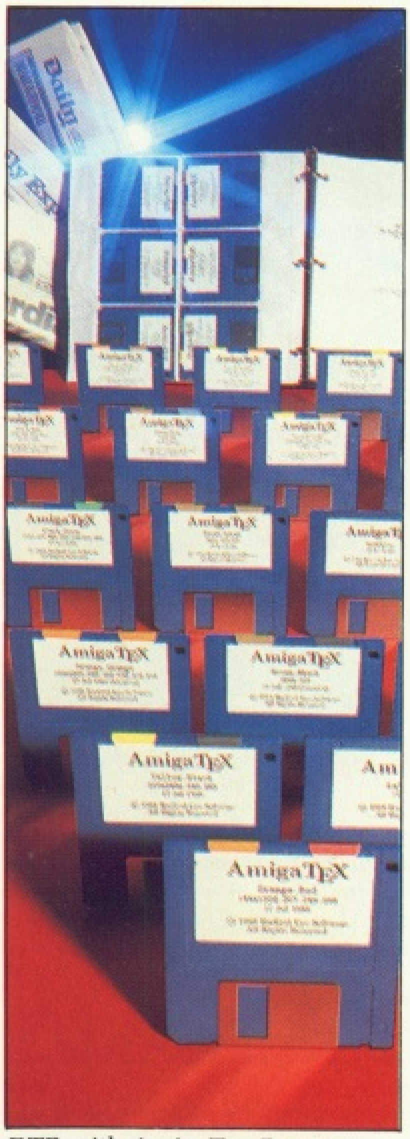




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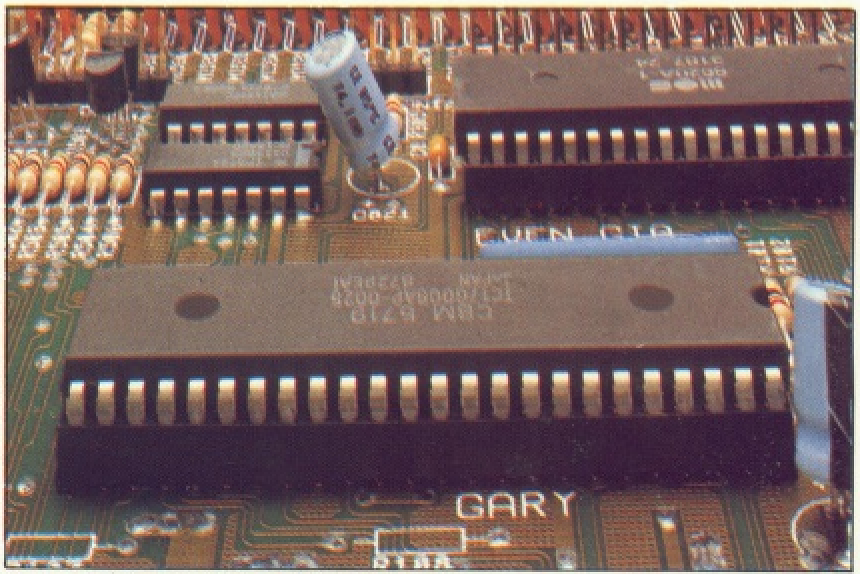
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Active Adventuring Page 14



Into the Silicon Underworld Page 56

Key to Amiga's success...the C64

KEY to the Amiga's ongoing success is the humble C64, says Commodore boss Steve Franklin. He was explaining his company's philosophy in an interview with *Amiga Computing* deep within the bowels of Commodore's massive stand at the PC Show.

Many observers expressed surprise that Commodore's only real product news at Earls Court concerned two bundles built around the venerable C64.

"People forget that a new generation of computer users is coming through", said Franklin. "The kids of today are the business users of tomorrow and we have to look after them, get them involved.

"We're remaining strong in the 8 bit market to encourage these youngsters and bring them into computing. Games players today are Amiga users tomorrow".

Franklin revealed that Amiga sales in the UK are now between 60 and 65,000, though he stressed he was talking A500 machines.

"The Amiga is now THE 16 bit product as recognised by the trade; dealers see the perceived benefits over our nearest competitor", he added.

To boost sales there is a new concerted promotional effort centred on the Amiga. The national TV and poster campaign will cost several million pounds.

Franklin ruled out the possibility of a bundled Amiga because he said the price would be counterproductive.

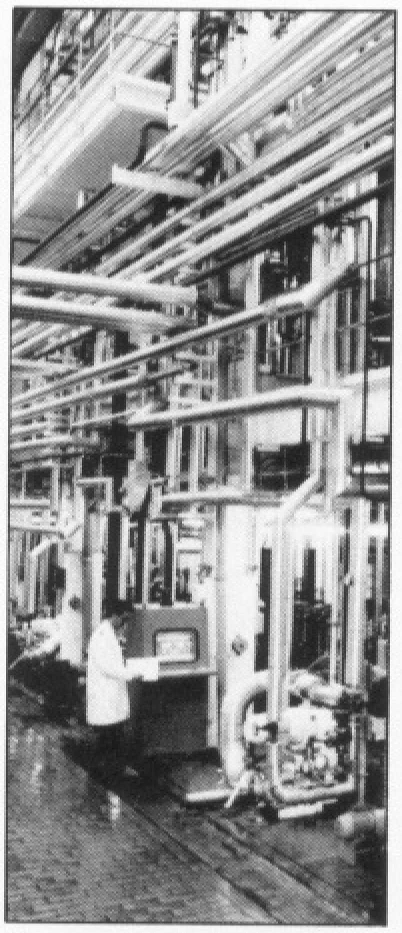
And he decried critics of the Earls Court event. Holding a trade publication with the headline "PC Show: Same as it ever was" he said: "This sort of thing upsets me.

"The show isn't the same as it was, and neither is the computer business – there's a real buzz about the place this year.

"There's a lot of business being done here and a general feeling of optimism about the future".



Shot from the Amiga promotional campaign



An operator, surrounded by some of the eight miles of pipe, checks data on his specially encased Amiga 2000 at Lever Brothers' new Port Sunlight soap plant.

Amigas keep it clean

AMIGA 2000 computers are cleaning up at Lever Brothers' new £12 million soap making plant at Port Sunlight.

The machines – housed in special protective casings – fully control the flow of soap constituents through eight miles of pipe by means of 1,500 sensors.

"We felt PCs just weren't man enough for the job", said project control engineer Chris Fox. "That's why we chose Amigas.

"We have no way to run the plant other than via the Amigas – there are no fall-backs, no manual controls.

"It was a conscious decision to design the new plant so that it runs fully automated or not at all".

An in-depth report on how the Amiga 2000s control the new plant – opened by The Queen – will appear soon in *Amiga Computing*.

Disney film deal

MARKETING and distribution rights to products from French and German software houses have been acquired by Active Distribution (01-385 7622).

They include the Walt Disney licence for an Amiga version of Jungle Book from French publisher Coktel Vision.

"Jungle Book is a classic film which appeals to young and old and Walt Disney are re-promoting the film again this Christmas", said Active managing director Robert Stallibrass.

Future titles from Coktel for the Amiga will include Freedom, Emanuelle, Peter Pan and Terrific.

Active has also signed marketing agreements with German software house EAS for its hit release Zero Gravity.

Other pre-Christmas releases from the same source will be boxing simulation Ringside, and a three-game Amiga compilation.

Munsters move in

A NEW sister label to Alternative Software called Again Again (0977 797777) has been launched.

Its first game for the Amiga is The Munsters – based on the old TV series recently revived on Channel 4. The programming duo of Peter Harrap and Shaun Hollingworth of Teque and Pacmania fame are behind the arcade game, which will be released this month, price £24.99.

New plotters launched

A NEW range of A3 plotters has been launched by Roland Digital (01-847 5665). The high precision machines are priced between £795 and £1,295.

They have serial and parallel interfaces as standard, .0125mm resolution, 42cm/sec speed in all directions, and toothed drive belts.

All have auto pen capping, pen select and point of origin setting.

There is also a novel feature of pen-to-stock return if no command is received.

Amiga sound and graphics star in Christmas Show

THE Commodore Christmas Show, being held from November 18 to 20 at London's Novotel, promises to be bigger than ever – and Commodore is forecasting "an all singing, all dancing type event".

Undoubted star of the show will be the Amiga, which will be put through its paces in two new major attractions – a Graphics Workshop and a Music Room.

Involving the UK's leading lights in the use of both sound and graphics on the Amiga, they will provide platforms to illustrate the huge potential for the machine in these areas.

And, again for the first time, the show will provide the venue for a Xmas Card Design Competition. A bank of Amigas will be at the disposal of any visitors who would like to enter the competition, with a major prize being presented daily by a celebrity judge.

Commodore is once more reaching for the stars for the show, with Adam Faith and Anita Dobson – both headlining the new West End musical Budgie – among those scheduled to put in an appearance.

And ICPUG has revealed that it is to have a significant presence at the Christmas show, hosting regular question and answer sessions and presenting demonstrations on the Midi scene and Comal.

More than 100 exhibitors will be in attendance – many of them using the show as the launching pad for new Amiga products.

* * *

A DOUBLE first will be on offer from MicroWay, with the company's first product for the Amiga making its European debut at the show.

MicroWay's Flicker-Fixer board provides stable pictures in high resolution mode, making the Amiga a very practical alternative to a PC or AT for CAD and DTP applications.

"The Flicker-Fixer allows the Amiga display to achieve its full potential", says Microway managing directore Simon Shute. "And that's something it has never done before".

* * *

AN informal – and noisy – welcome is promised for visitors to the 17 Bit Software stand.

17 Bit is keeping a special attraction under wraps until the last minute, but visitors will certainly have a chance to learn more about the company's club, which offers a disc-based magazine, technical help and access to a library of more than 300 Amiga public domain programs.

* * *

A SPECIAL product at a special price will be on offer from Meedmore, who will be launching a new higher accuracy lightpen and an enhanced 16 piece suite of software.

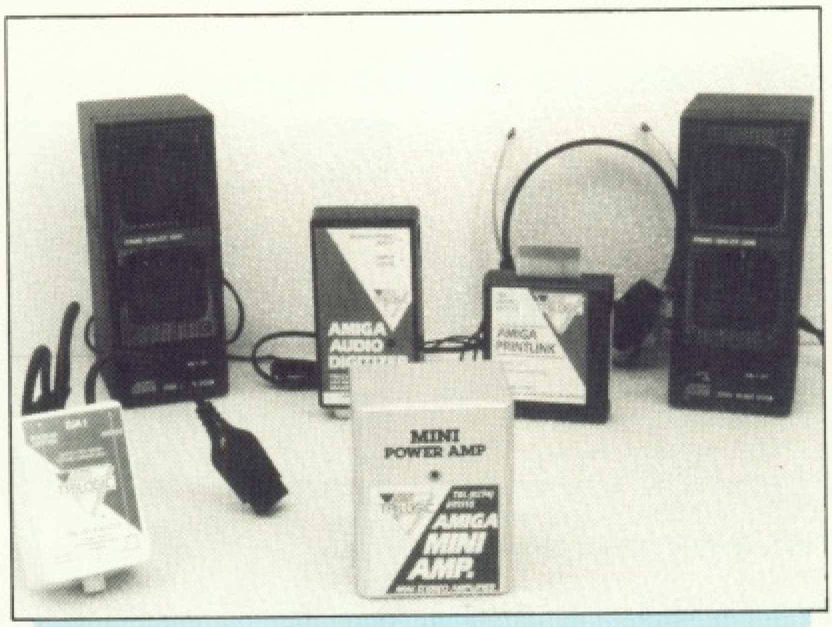
Fully menu driven and incorporating architectural and electronic design aids, the software features pixel-accurate freehand drawing.

All sorts of graphics utilities are provided – in a choice of 16 colours.

* * *

LEADING software publisher Microdeal will be previewing several major games at the show, including International Soccer, Fright Night, Turbo-Trax, Tetra Quest, Replay, Airball and Major Motion – all priced at £19.95.

Also available will be VTX On-line, a graphics-oriented communications package.



ON sale for the first time at the show will be two unique products from Trilogic which allow users to get the most from their Amiga's sound capabilities.

MiniAmp 1 drives one or two pairs of stereo headphones, is easily connected to and powered from the Amiga – and allows you to listen in stereo in complete privacy. Its big brother, MiniAmp 2, has two compact speaker units.

Trilogic's budget-priced Audio Digitiser features adjustable input level, and an overload indicator to ensure consistently good results.

No software is supplied, since the Digitiser works with most readily available commercial programs, including Audiomaster, Prosound and Perfect sound.

HIGHLIGHTING the Amiga's graphics capabilities, Precison Software will be displaying several new and upgraded products.

The Professional Animation Sequence Editor offers owners of any Amiga paint package the means to turn cartoon sketches into full-blown animations, while Page Flipper Plus F/X provides the full power of desktop video.

Precision is also introducing Charon 5, an 11 level, 5,400 screen epic which combines strategy with arcade action.

And Precision's Superbase range will be out in force, including the new Superbase Personal 2 with added mail-merge and text editor, and the upgraded Superbase Professional.

Also on the Precision stand will be an extensive range of Amiga software and peripherals – all with special show discounts, and many at "silly" prices.

* * *

VISITORS with a preference for hard copy won't be neglected – George Thompson Services will be using the show to launch its latest book, Professional Results with Deluxe Paint II.

Full of tips and tricks and accompanied by more than 200 illustrations, the book combines basic techniques with Amiga graphics power. Subjects tackled include slide production, video backgrounds and landscape design.



A new agreement means that Frontier Software has added the Supra's Amiga hard drives to its range of products – and they'll all be on display at the show.

The high performance Amiga SupraDrives are available in 20, 30 and 60Mb capacities for the Amiga 500, 1000 or 2000,

Fax and wizardry

LATEST additions to the fast-growing range of facilities on MicroLink (0625 878888) include fax and the cult adventure game Shades.

Derek Meakin, head of MicroLink, said: "Our plans are to offer subscribers a multiple fax service which – like our telex service – will allow subscribers to send a message to up to 50 addresses simultaneously.

One of the world's most popular interactive adventures, Shades allows up to 128 people to play at any one time.

MicroLink subscribers will now be able to join the more than 6,600 people from around the world who have attempted to achieve the exalted rank of Shades wizard – a feat accomplished by less then one per cent of participants.

News and views

TWO Amiga 2000 machines have been helping visitors to the New Forest get the most out of their holidays this summer.

The computers were installed in the New Forest Museum and Visitor Centre to provide an interactive database containing information about the famous tourist attraction.

Hundreds of digitised photographs of local beauty spots, wildlife, recreation facilities and places of general interest are held on the Amiga databases.

When a visitor wants information about a particular subject a single keystroke brings up a series of menus and displays.

People can plan their expeditions by using a specially designed keypad which calls up animated sequences of various activities.

Programmer shortage

AS Christmas approaches more and more shops seem to be saying that the Amiga is comfortably outselling the ST, with a couple of major London shops having stopped selling the Atari.

The success of the Amiga has rebounded on software houses which have found that there is more work than there are programmers to do it.

CRL and Argonaut software have both called *Amiga Computing* asking for the names of programmers who might be interested in working in-house. With a large number of programmers wanting to work at home it is the really big projects which require coordinated teams which seem to be suffering most.

Clement Chambers of CRL said he wanted a "red hot 68000 programmer and a competent coder". One software house said it would take on as many good programmers as it could get.

Art for art's sake

GEORGE Thompson Services is to launch a new book called Professional Results with Deluxe Paint II. Aimed at the novice artist it teaches drawing techniques as well as how to get the most from Electronic Art's much loved program.

The book looks at ways in which to get your picture into and out of the computer using traditional art methods and video. The comic strip advice should be especially useful to anyone using DPaint with ComicSetter. The book will cost £24.95, and is available with two discs of utility programs and clip art for £44.95



New Workbench is here at long last

JIM BUTTERFIELD reporting from Canada

WITH the year 2000 a scant 12 years away, some Commodore public relations types are thinking in terms of a "This is the age of 2000" campaign for the Amiga. Long before the year 2000 arrives, however, it seems likely that mainstream Amigas will carry higher numbers ... 2500, or even the fabled 3000.

Users are still chattering about the great 3000 hoax perpetrated on a USA west coast user society. The machine was really a cleverly redecorated Apple, shown by a group claiming to be Commodore VIPs. The date of the club meeting? April 1, of course.

The long-awaited Workbench 1.3 system has finally almost arrived. A Commodore spokesman said that 1.3 is "released, but not yet shipping". It's high time, especially considering that Commodore has shipped a number of Amigas with 1.3 Kickstart roms in place.

New users might be puzzled to see the initial screen showing a hand holding a Workbench 1.3 disc – before that disc version was available!

As a matter of interest, it seems likely that there will be no regional differences in the various releases.

Europe may not get exactly the same discs as will be seen in the USA and Canada.

The 1.3 Workbench disc is getting quite full, to the extent that printer drivers and fonts have tended to migrate to the Extras disc.

The 2084S monitor is now available. It's similar to existing Amiga monitors, but has stereo sound.

Computer shows here still have the original 1.0 Developer's Kits for sale at greatly reduced prices. Sometimes they come with weighty (literally) documentation; sometimes the individual elements, such as C compiler and MetaComco assembler, are packaged as a separate unit.

Some users are fearful of buying material that is relatively dated, but it's a bargain.



**Jim Butterfield, who lives in Toronto, is acknowledged world wide as the Commodore guru*

Commodore was packing no surprises

ALTHOUGH Commodore was boasting the largest – it certainly had just about the most imposing – stand at this year's PC Show there were no big surprises there for visitors to Earls Court.

Commodore's huge black pyramid contained a 100-seater theatre offering presentations of third party products. Remainder of the public access floor space was given over to hands-on opportunities to play with existing Commodore technology.

With nothing really newsworthy to promote, Commodore marketing manager Dean Barrett was left mouthing vague generalities such as: "1988 is definitely turning out to be a great year for us – the impact of our price restructuring in the summer for the Amiga 500 is now starting to have a dramatic effect".

But he promised: "We will be taking a stronger stance in all of our key markets over the next 12 months".

Meanwhile it was left to third party suppliers to provide interest for Amiga users.

This again seemed to centre on the games sector, though there was a scattering of interesting serious packages on view around the show if you looked hard enough.

Big peripherals line-up

MICRODEAL (0726 68020) unveiled its new Replay Editor version 4.0 software incorporating mouse control, multi sample presets and midi interface facilities.

It has full mouse and drop-down menu control, extra frequencies on 50 and 61KHz in HiFi mode, trigger on sample and replay with adjustable sensitivity, and a real time oscilloscope with freeze frame.

Michtron UK (0726 68020) introduced US import VTX On-Line, a graphics orientated 1200/75 baud telecommunications package for the Amiga.

It includes online help with manual references, full scripts with automatic script generation, clipboard compatible window buffer, two-window conferencing chat mode and dual user interface.

There is DEC VT-100 and Tektronix 4014 emulation, automatic graphics zoom mode, Compuserve GIF graphics and multiple file transfer protocols including Ascoi, Xmodem, Xmodem 1K, Ymodem, Kermit and B Protocol. Price £59.95.

Cherry Electrical Products (05827 63100) launched a new graphics package. Its enhanced digitiser driver enables the Cherry A3 Graphics Tablet Mk 3 to emulate the Amiga mouse.

The £550 digitiser package, price £550, consists of A3 graphics tablet, 4-key cross-hair cursor puck, stylus, calculator-type mains adapter and cabling.

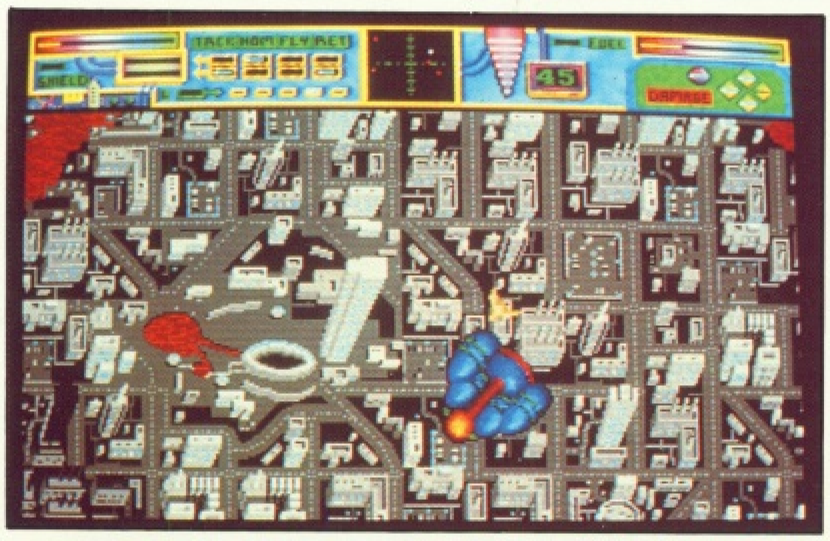
HiSoft (0525 718181) introduced the new version of its popular – but two-years-old – assembly language development system Devpac Amiga.

Improvements to the assembler include multi-section code, long labels, local labels and a binary include directive.

But the biggest single improvement over the original product is that both assembler and debugger are available instantly from within the editor and programs can be assembled directly to memory. Price £59.95. Cameron UK (01-499 7517) was showing its £299 mouse-like Handy Scanner and Amiga version of its £590 flat-bed Personal A4 Scanner.

Hugh Symons Distribution (0202 745744) entertained visitors with an Amiga hooked up to a trio of Roland synthesisers and running Dr T KCS sequencing software.

On the bookshelves at Dabs Press (061-766 8423) was the new Dabdhand Guide to AmigaDos. Written by Mark Burgess it costs £14.95 and should be available this month.



Microdeal's Replay in action

Games war hots up

THE battle for supremacy in the Christmas games market started in the Earls Court leisure hall where Ocean and US Gold faced each other in a war of the decibels.

"We've been number one at Christmas for the past two years with Gauntlet and Outrun and we intend to be there again with Thunder Blade – the most popular coin-op in Europe this year", said US Gold sales boss Geoff Brown.

"This will be backed up by Summer Games, LED Storm from Capcom and many others".

US Gold (021-356 3388) also announced impending Amiga releases Realm of the Trolls, Joan of Arc, Starball, Tiger Road, Last Duel, Human Killing Machine, Black Tiger and Forgotten World – all due out between now and next March.

Across the aisle at Ocean (061-832 6633) sales manager Paul Patterson said: "Last year people laughed when we said we'd have five games in the top 10 – but we did it.

"This year we're aiming to fill the top five places, and we can do it with the likes of Batman, Rambo III, Dragon Ninja, Robocop, Operation Wolf and Wec Le Mans – all available on the Amiga at £24.95.

"These days we're looking for around 100,000 sales for everything we produce".

Ocean and US Gold won't have things their own way, however. They can expect plenty of competition from Telecomsoft's Rainbird and Firebird labels (01-379 6755).

Due from Rainbird are Fish! and Verminator, with Weird Dreams and Deja Vu II:Lost in Los Angeles "coming soon" – priced £24.99 each.

Firebird has released an Amiga version of the David Braben and Ian Bell classic Elite in glorious 3D graphics, price £24.95. Hot on the heels of Elite, Firebird's November release will be Blazing Barrels by Icom Simulations, price £19.99, with Savage, written and programmed by Probe Software, to follow.

Hewson (0235 832939)

THE PERSONAL COMPUTER SHOW REPORT

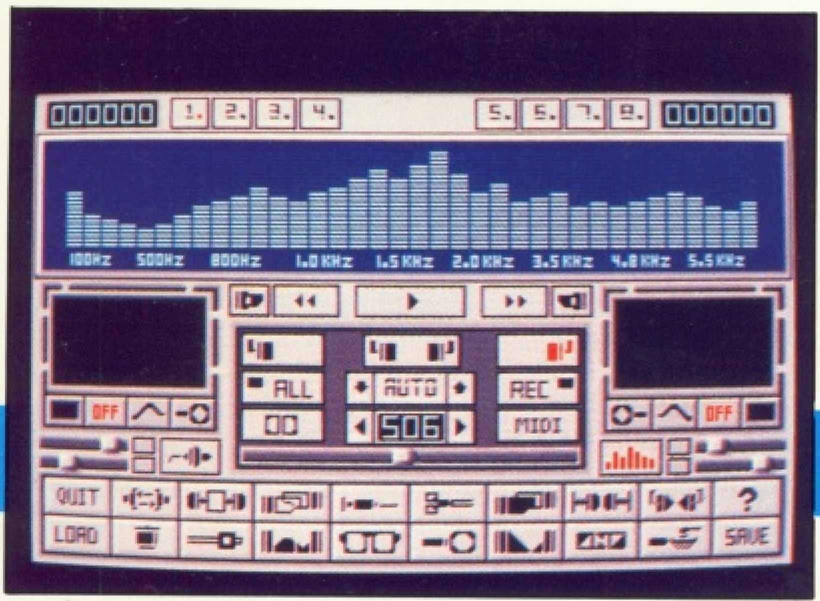
Z88 laptop latest

WITH the availability of data transfer links between the Amiga and Z88, there was much interest in the latest software for the Cambridge Computer laptop.

Spell-Master from Computer Concepts (0442 63933) is a £59 easy-to-use text editor with integrated 60,000 word spelling checker. Text files created using Pipedream can be loaded into the text editor and spelling checked using the quick-edit facility.

On a smaller scale, Wordchip from Harvester Information Systems (01-831 2331) contains 30,000 words and costs £49.95. Also from Harvester comes Data Organiser for simple record keeping, price £39.95.

Due for release at the end of the year, priced £69, zBase database from Wordmongers (0296 437878) has a fast search facility plus the ability to index data and output files for further processing of business applications such as sales order processing and stocktaking.



Mandarin's Pioneer Plague



Microdeal's Turbo-Trax

also previewed a strong all-action Christmas line-up for the Amiga in Nebulus, Eliminator, Stormlord and Astaroth – all priced £19.99 – plus Kalashnikov which is due out early in the new year.

The new Imageworks label from Mirrorsoft (01-377 4645) fulfilled its promises to supply Amiga users with sophisticated action games. On view were air combat simulator Sky Chase and abstract puzzle game Bombuzal, price £19.99, plus Fernandez Must Die and Speedball, price £24.99.

Interactive Cinemaware from Mirrorsoft to follow Defender of the Crown includes Rocket Ranger, price £29.99, Lords of the Rising Sun, price £24.99, with TV Sports Football – "so real it sweats" – to follow in the New Year.

Dungeon Master is on its way for Amiga users from FTL. Other Mirrorsoft projects include Bismark, Theatre Europe and Waterloo – all from strategy specialists PSS, priced £24.99. Firezone, Final Frontier, Sorcerer Lord and Harpoon will follow.

And Mirrorsoft will be releasing an Amiga version of Falcon AT, the award-winning fighter plane simulation from US publisher Spectrum Holobyte. From the same source in the New Year will come PT-109.

Mandarin Software (0625 878888) made a stunning debut in the Amiga entertainment marketplace with Pioneer Plague – the world's first 4,096 (HAM) colour mode game and the only package specifically developed to take advantage of the Amiga's hold and modify graphics facility. Price £19.95.

"There's nothing like it around", said Mandarin's Chris Payne. "As a giant leap forward it can fairly be likened to when technicolour took over from monochrome film".

Also launched by Mandarin were Lancelot and Lombard/RAC Rally, priced £19.95 each. Tri-adventure Lancelot is based on the Arthurian legend – there's a chance here to win a £5,000 replica of the Holy Grail – while Lombard/RAC Rally is bang up-to-date, faithfully recreating the gruelling cross-country journey of a 300bph Ford Sierra RS Cosworth.

Microdeal (0726 68020) concentrated on three new Amiga titles – an arcade game based on the film Frightnight, spy-chase Major Motion and model racing car simulation Turbo-Trax. All are priced £19.95.

Christmas offering from Prism Leisure (01-804 8100) is The Kristal – not cheap at £29.95, but the three-disc science fiction odyssey programmed by Fission Chip Software is already being hailed as "the game of the decade".

Grandslam (01-247 6434) launched its Amiga versions of the Namco coin-op classics Pac-Mania and Pac-Land, both priced £19.95.

Big Apple (01-368 5545) recreated downtown Manhattan on its stand to present its first Amiga product Oops!, an addictive strategy maze game priced £19.95.

Novagen Software (021-449 9516) gave pride of place to an entertaining demonstration of Paul Woakes' progress on his 16-bit blockbuster Damocles, sequel to Mercenary and due out for Christmas.

The team at Domark (01-947 5622) shared its stand with Margaret Thatcher. But it was only the Spitting Image version of the Prime Minister, there to publicise Domark's latest licence.

Domark was also previewing a number of other leisure products due for launch soon. They included The Computer Maniac's Diary, Return of the Jedi, Genus II – Trivial Pursuit (prices as yet undecided) and Live and Let Die, price £24.99.

On line to fantasy

Neils Reynolds on the story behind Shades, the fast-growing multi-user adventure

DEEP in the wooded wilds of Southern England, far beyond the Stockbroker Belt where no Yuppie has ever ventured, lives a mysterious being who has created a strange and mystical land. He is the Arch Wizard Hazeii – adopting the name of Neil Newell for everyday use – and the land is Shades.

No longer a figment of his imagination, Shades has been made accessible to any mere mortal who has the use of a telling bone, a modem and who is enrolled in the fabled society of MicroLink/Telecom Gold and Micronet.

The Arch-Wizard first became interested in multi-user adventures when he encountered the original multi-user game MUD running on a mainframe at Essex University.

However, he soon felt that the game could be improved in many areas, and what started as a hobby was soon taking up all his time. So it was that the Land of Shades came into being and mild-mannered Neil Newell became Hazeii, Arch Wizard.

Shades is a vast sprawling landscape where lost souls, knights, wolves, witches and wizards prowl looking for treasure or trouble – or both. You create your own personality within the game, travelling through the mysterious kingdom, forging alliances and fighting battles in your quest for treasure.

You strive to work your way through 13 ranks of Innocents, Soothsayers, Necromancers and Warlocks until you attain the ultimate rank of Wizard or Witch – depending on your own personal inclination.

In this true multi-user game, other travellers you meet in Shades may be computer generated, but are more likely to be insomniacs attached to a telephone line anywhere in the country. The character you are talking with could be your next door neighbour or a lighthouse keeper in the Orkneys – players have been known to log on from all over Europe and as far away as New Zealand.

There is no denying the party atmosphere of Shades. Even those who are not accomplished adventurers can enjoy the game, talking to other players, acting out fantasies or just getting used to the game at their own pace.

Help can be asked of fellow travellers, but then you are never sure whether their advice can be relied upon...

There is much on offer to serious adventurers too with brain-curdling problems to solve, a whole babble of beasties and nasty characters to deal with and promotions to achieve – by fair means or foul.

So the adventure does not become too crowded and all players have a good opportunity at treasure-grabbing. Up to 16 independent games can be running at one time and you can choose which of them to join.

You are also told who is playing in which game, so that if you have an especially good relationship with another player – or a vendetta to pursue – you can join it, if there's room.

Starting out is made easy for the novice by a special introduction area. This leads you into the game with a full information centre about the Land of Shades. Progressing through this you eventually arrive in the Land proper and your quest begins.

Shades currently has a user base of more than 6,000 players. Of these only 40 have achieved the ultimate rank of Wizard – given special powers and privileges so they can directly affect the progress of the game.

Indeed, even the all-powerful Hazeii himself treads the paths of the Land (sometimes invisibly) and his wrath is said to be terrible if roused by those with ideas above their station.

The fantasy is constantly under development and new locations are currently being designed and built into the game as the Arch Wizard concocts ever more fiendish devices to entrap the unwary travellers in the Land of Shades.

● *A regular tour of the mystical land of Shades starts in next month's Amiga Computing.*

Shades is available on:
MicroLink/Telecom Gold..... key >Shades
*Micronet/Prestel ....key *Shades#*

```
Entrance Tunnel
You have arrived in a dark and gloomy tunnel hewn from solid rock. The
walls are damp to the touch and you can hear the rustle of bats wings
in the darkness above you. The tunnel runs east and west from here but
unfortunately passage east is impossible as the roof of the tunnel has
caved in creating an impassable barrier. Light can be seen filtering
in from the west.
*>who
Tina the tormenter Adventuress is playing (Safe)
Minnie the moocher Seeker is playing
Lallit the spot Dauntless is playing
Seymour the ditherer Explorer is playing
Aurora the blinding light Seeker is playing
Jane the tarzans mate Adventuress is playing (Safe)
*>A large black bat flutters in.
The bat circles you for a moment and flutters out.
Minnie the moocher Seeker is here
*>The thief slinks in, carrying a bag over one shoulder.
*>Seymour shouts "Anyone want a rusty key ?"
Minnie the moocher Seeker and the thief start to fight!
The thief has just passed away.
*>A bell sounds urgently in the distance...
*>You hear a loud ZZZZAPPP followed by a horrible shriek!
```

Adventuring through the Land of Shades: Keying WHO shows the players currently in the game

Active adventuring

Dave Eriksson fights demons from EA and mammon from BT



FOLLOWING the success of The Bard's Tale, Electronic Arts has now released the Amiga version of The Bard's Tale II – The Destiny Knight. If part one was tough going then wait until you enter the realms of part two. Part three is also in the pipeline – heaven help us.

Bard's II is a role playing adventure similar in format to its predecessor. Puzzles are much improved, with many cryptic clues to be found and interpreted before each stage may be completed.

The story continues from where Bard's I stopped. Members of your team were looking forward to living off the tales of their exploits, but this is not to be. Evil still stalks the land and it is their fate to solve the mystery of the Destiny Knight.

They find themselves in the Adventurer's Guild in the town of Tangramayne and their first task is to rescue a local princess. She has been abducted and is being held at the bottom of a four level starter dungeon that will hone your team for the more serious work to come.

After this, they leave town and travel through the wilderness to consult the Sage. He offers advice throughout the rest of their quest – to

find and restore the seven segments of the Destiny Wand.

Towns and places in the wilderness must be visited, mapped and their puzzles solved before the final objective can be achieved.

Follow the instructions to copy the master disc and create a character disc and you are ready to start. As before, six ready made characters are provided, you may use them, create your own or import characters from a Bard's I disc.

When you create a character you first choose his race – human, elf, dwarf, hobbit, half-elf, half-orc or gnome. Random values are given for strength, dexterity, intelligence, constitution and luck. If you do not like what you are, you may re-roll another set. Finally you must decide class: Warrior, paladin, rogue, hunter, monk, bard, conjurer or magician, and name your traveller.

Classes have different abilities so read the instructions carefully before choosing. Initial attributes are important, especially in relation to the proposed class – strength to a fighting man, intelligence to a magic user, dexterity, constitution and luck to all.

Although you can take out a team of seven, it is often desirable, sometimes necessary, to leave one or more slots free. These may be occupied either by creatures you meet or by others called to your aid by your magic users. Friendly dragons are useful long range weapons in areas where magic does not work.

A Bard can both fight and cast spells by singing special songs. Singing is thirsty work and between drinks he can only sing as many songs as he has levels of experience. He is a pretty weak magic user but his ability to use magic instruments can make him very useful. Cold horns can freeze a number of foes and Death Drums administer the coup de grace to almost anything!

Bard's II differs from Bard's I in several ways but the most important are the option to save your game position outside the Adventurer's Guild, its recognition of distance and the use of missile weapons.

The first four team members may directly attack creatures up to 10 feet away. Other ranks of assailants may be as far away as 90 feet and may only be attacked by magic or missile weapons.

The team may only move forward – 10 feet a turn – when there are no opponents within 10 feet. One strong creature can hinder the team's advance while archers, dragons or magic users are showering death from afar.

One particularly unpleasant situation you will become familiar with is a magic user at 90 feet creating a series of further magic users or death-dealing Slayers between him and you. Some of these additional magic users creating further magic users.

The cities are smaller than in Bard's I and are easier to map. There is a map of Tangramayne in the instructions which shows all the useful places to visit.

KILLING monsters adds both to your experience and purse. As experience grows, visit the review board; if experience is high enough you will gain a level. This is important as an increase in level adds to hit and spell points and also to one of your main attributes.

Greater hit points enable you to take more damage and spell points determine the number of spells that may be cast. Loss of hit points in a fight can be restored by visiting a temple – in exchange for some of your hard won gold. Spell points slowly restore as time passes, visit Roscoe's Energy Emporium and you can buy them back – for more gold.

As in Bard's I, the initial stages are not easy. Each character starts with only a few gold pieces and must visit Garth's Equipment Shoppe to buy weapons and armour. Each item of armour will reduce your armour class; which in turn reduces damage sustained in battle. With such little money, you can only buy fairly low quality equipment.

Money is all-important, for better equipment, to heal wounds and as payment to the review board for magic users to learn more spells. Items found on your foes may either be used or sold at Garth's. You can cheat a little by creating additional members, pooling their money and then deleting unwanted characters.

As in Bard's I, low level warriors are expendable; concentrate on keeping higher level characters alive and improving the levels of your magic users.

Importing high level characters from Bard's I seemed too much of a cheat, so I only transferred a very rich magic user and started from scratch with the others. Even so it was hard work keeping the team alive through that first dungeon. As a reward for success, their experience was bumped up to 200,000.

Even with the levels that this gave the party, the other dungeons were no walkover and that original imported magic user is still with the team.

All special areas are loosely called dungeons, even if they are in fact towers, crypts or fortresses. In all but the first, they end up with a timed puzzle snare. Once this section is entered, there is no turning back and ►



At Garth's Equipment Shoppe there is a large range of items for sale

you cannot save or pause the game. You must solve its puzzle or die.

If you have saved at fairly regular intervals death in a puzzle snare is not such a catastrophe, as you can always return for another attempt.

Dungeons are mapped on a 22 by 22 grid, but they scroll round and if you keep going east you could come back to where you started. Map dungeons very carefully, you *must* be certain that you have been everywhere. Messages written on walls or spoken by magic mouths are nearly all vital clues to either the puzzle snare in that dungeon or to gameplay elsewhere.

Some areas forbid any form of light. These parts often contain spinner squares, where you are magically spun around. Using the Bard's song to produce light, or a magical item like a Dayblade, will produce a short burst of light – just enough to check your orientation.

Creatures met in some dungeons are very powerful and it is no dishonour to retreat. If one offers to join your team, accept and view its hit points with horror. On several dungeon levels I found the only way to survive was to run.

Your magic users start out as conjurer or magician, each with different sets of spells. With progress, they may change class to sorcerer, wizard and finally archmage. The archmage has some powerful spells, but it takes a long time to master this level.

Lots of interesting items are found in the loot from defeated foes. Many have magic capabilities – experiment to find out what they do. The sage may tell you about some of them. The dungeons also have clues on what to ask the sage, but he charges more the further you progress.

SAVE before entering his hut: if you do not offer enough money, return to a guild and load game. You will then be back outside the sage's hut ready to offer a little more gold. Offerings are not cumulative – it has to be enough first time.

Bard's II uses a lot of memory and it is unwise to use two disc drives as the small amount of memory used by the second drive can occasionally cause the program to crash. For safety, make a back up character disc



Warriors are an important component of the party

at fairly regular intervals.

Commands may be given via the keyboard or mouse and work very smoothly. The graphics, both of the scenery and the creatures you meet are good.

If you get really stuck, Electronic Arts Customer Service Department is happy to help on 0753 46465. It also provides an excellent clue book, complete with dungeon maps for £5.

MANY people believe that Infocom produces the best adventure games. This obviously depends upon the type of game you favour, active or passive. Is it a total mind bender or do you prefer the adrenalin to be pumped as well?

If you are for the mind-bender type, you may have to consider someone else taking over the lead position. Corruption, written by Magnetic Scrolls and distributed by Rainbird, must surely be the nearest contender we have yet seen as a genuine replacement to Infocom's past successes.

Your knowledge of the plot at the start is minimal. All you have is that your name is Derek Rogers, a financial whiz in the City. Having shown a talent in dealing with today's money markets, you have been offered and accepted a partnership from David Rogers – that could cause some confusion for a start.

The new job seems almost too good to be true. You just love your new BMW with its built-in everything.

Back in the office you find that your new secretary is somewhat uncommunicative and that you do not even have your own phone, but as the firm is moving to new premises shortly you are not that worried – or are you...

Initially it is the little things that jar, like the mention of the Serious Fraud Squad in the dealing room and being rather roughly excluded from a meeting between David and the company's legal adviser.

As you start to look around the feeling of unease grows and the discovery of your firm's cheque for £60,000 made out to a wanted criminal is definitely causing cold chills to run up and down your spine.

A fairly short spin at the keyboard will convince you that being framed for insider dealing is only one of your worries. Two successful attempts on your life must make you wonder if there is more than coincidence in the fact that you and your new partner are both D. Rogers.

THERE are plenty of things to find and manipulate in Corruption, but the crux of the game is timing and character interaction.

Everything possible must be examined and noted. Clues found in this fashion can then be fed to other characters via ASK ABOUT or TELL ABOUT. From their replies a fresh line of enquiries may be built up.

Each command you input makes ▶



You should have been more careful crossing the road. Even in hospital you are far from safe

◄

the on-screen clock tick on one minute. Not only does this mean you must clock watch to ensure you have time to get to any appointments, but also that people and items of interest may appear and disappear as time goes by.

Unless you have an exceedingly good memory you must make notes of what you have spoken about with various people. Some events and replies will only happen if you have completed specific actions.

As time is important, you will certainly be using the save facility. If you return to a previous save you must know what you have said and what you have yet to say.

The box contains some vital information presented in the form of sheets from a filofax notebook and also an audio cassette. The latter you will be cued to play at the appropriate time and is a lovely example of how, with clever editing, an innocent conversation may be used against you.

Graphics are as good as any yet produced by Magnetic Scrolls and not surprisingly concentrate on people rather than scenery. There are the usual frustrating-to-key-in ciphered hints and at first glance they seem to be less useful than in the past. This may be a mistake, as Corruption is not an easy game to solve and without sensible help some less than zealous players may falter on the wayside.

REPORT CARD

CORRUPTION
Magnetic Scrolls/Rainbird
£24.95

STORY LINE..........
A plot that could win an Oscar.

AURA....................
Has you on the edge of your seat.

STAYING POWER.
A daunting problem to solve in time.

GAMEPLAY..........
Fine interpreter makes all possible.

VALUE...................
Good if you've got the staying power.

DIFFICULTY..........
Not easy but dedication pays off.

OVERALL 85%

Very good, but not for those who like to take their time finding things.

REPORT CARD

THE BARD'S TALE II – The Destiny Knight
Electronic Arts
£24.95

STORY LINE..........
No frills plot with twist in its tail.

AURA....................
Only when your party limps home with its dead and wounded can you relax.

STAYING POWER.
Many many days of concentrated action.

GAMEPLAY..........
Proven system with even more features.

VALUE...................
Lots to find, lots to do in Bardland.

DIFFICULTY..........
Survival and mapping not always easy, new teams should stay near temples.

OVERALL 87%

A good mix of tactics and cerebration.

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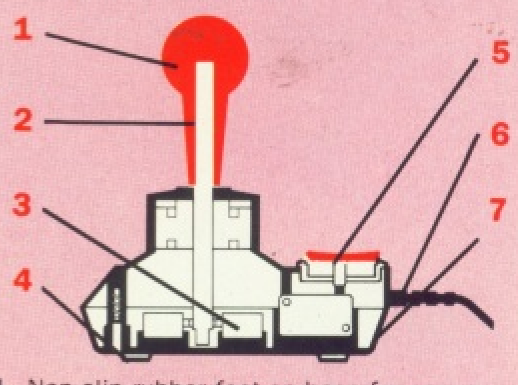
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COMIC GENIUS

Holy laserjets, Amigaman! Rupert Goodwins draws his conclusions on a program which makes desktop publishing more fun than picking up a Penguin



FOR a machine that tells lousy jokes, the Amiga has great comic potential. The worlds of the Great American Comic Paper – colourful, loud and picture-based – and the Amiga – colourful, loud and picture-based – were destined to mesh from the beginning.

Some might call it karma, others – noting Andy Warhol at the Amiga launch and the similarity between the technical documentation and certain underground publications of the late '60s – would call it sound marketing. Perhaps it's all the same thing.

Whatever, the Amiga now has a desktop publishing (DTP) program for the twilight world of superheroes, Snoopy and shazam. ComicSetter from Gold Disk – producers of Professional Page, probably the best Amiga DTP program – is designed to let the would-be boy (or girl) Marvel churn out their own strips, newsletters, posters and even complete comics.

It comes with plenty of graphics, a knowledge of the rules and traditions of comic layout and style, and needs at least a megabyte of ram. But for those teetering between a second floppy or that extra half-meg of silicon, it is quite happy with just the one drive on an A500.

A swift double-click on the all-action icon from the Workbench – it comes with 1.3, of which more later – brings up the main screen. It all looks familiar enough to anyone who's dabbled with painting, drawing or DTP programs – a black title bar along the top of the screen, a selection of cryptic icons along the lefthand side and a large blank area in the middle.

THERE are the familiar palette, paintbrush and circle gadgets, but what of the stern face, the kissing turtles and the mouth with straw? Time for the manual.

In fact, the manual will have been consulted before any work gets done anyway, as we lucky Europeans have to pass the "Page 35, line 2, word 4" test before we are recognised as friends. Nasty nasty. I have a certain sympathy for Gold Disk, but it will take the hacking posses less time to rip off than Clark Kent's shirt while the rest of us will be cursing lost

manuals deep into the night.

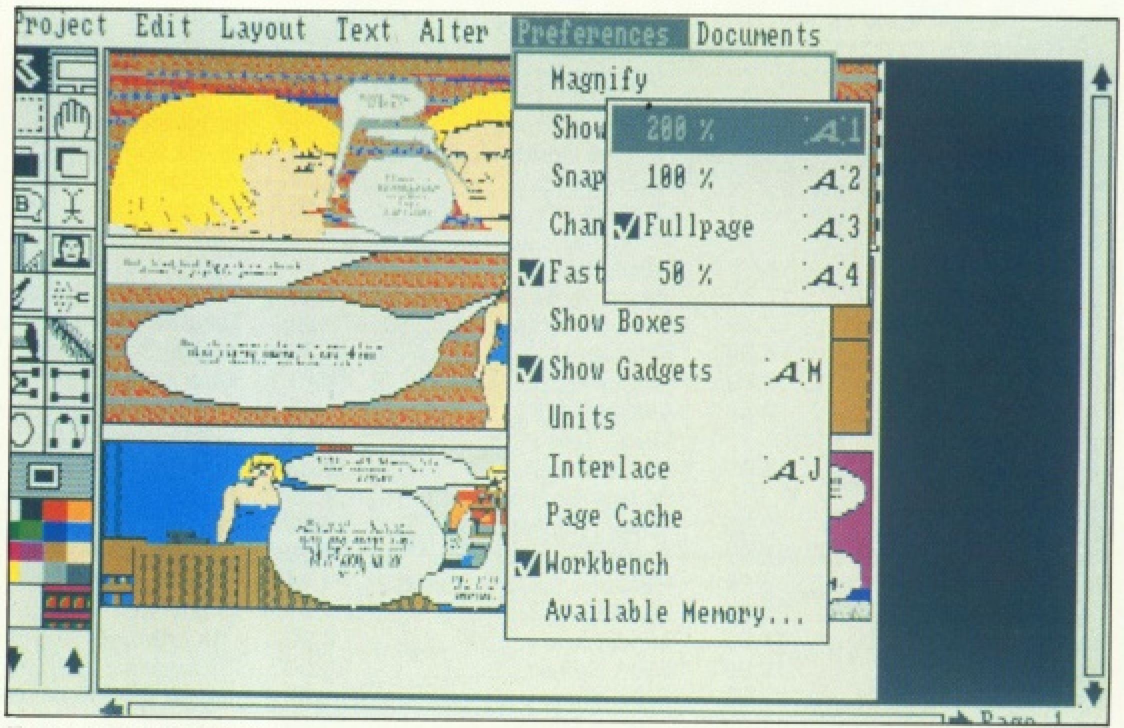
After that it gets better, and fast. The manual takes the new user through a mouse-on tutorial, 10 minutes into which a recognisable comic strip is taking shape on the 1084. Those expecting to launch straight into a Watchman cloning session will be disappointed though, as comic setting proves to be much more of a science than is apparent from the dog-eared publications weighing down the shelves in Forbidden Planet.

The first part of the tutorial is a quick tour of all those gadgets. The mouth-with-straw is in fact the Drawing Mode Gadget (silly me – it's a T-square and a triangle), and switches between structured and bitmap drawing modes. These two modes are right at the heart of the way ComicSetter handles graphics. The face is Bitmap Create; a way into the painting capabilities of the program, and the kissing turtles are for text entry. Sometimes I wonder about icons...

LOOK at any comic, and the page will be divided into panels. There's a tool for this, which allows a panel to be placed anywhere on the page – they can be shuffled around later. A menu option generates a pageful of panels, all lined-up and ready for action. This is a common theme of ComicSetter.

While the novice is just getting going there is a lot of hand-holding. Things happen automatically; items are aligned to a grid, graphics clipped to fit the space available, boxes appear where something is about to happen. All this results in professional output with a minimum ▶

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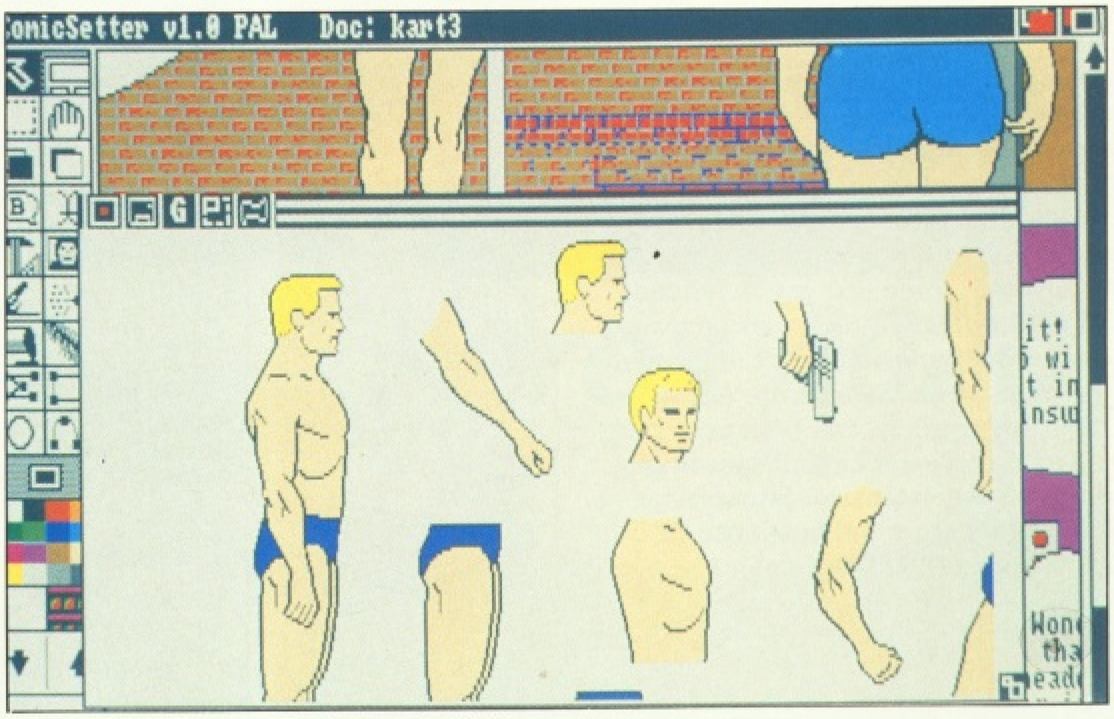
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of fiddling, keeping enthusiasm alight. When some skill has been built up, then the aids can be turned off for a freer, more exciting format.

Once some frames have been placed on screen, one is selected – click on it, of course. Putting some graphics on it is a matter of choosing Import Graphics from the Project menu (why no gadget?), when the pointer changes to an inverted L. Plonking this on a frame and dragging out a rectangle defines an area to clip the graphics to. Then a picture is, er, picked from a standard directory listing window.

About pictures: ComicSetter can work with any IFF picture, so yes you can Dpaint up some titles, scan in the dog or sample Noel Edmonds (have you no shame?) from the video. You can even, if possessed of the technology and a disregard for intellectual property rights, nick Judge Dread with a hand-held scanner and set him to work sweeping the streets of Gotham City. Holy Moebius, Robin!



Naked people are part of the supplied clip art

COMICSETTER comes with a disc of standard-issue superhero clip art, various flying women in swimming cozzies (what is it with superheroes and near-nudism? At least the baddies have the decency to wear suits), arms, legs and lasers. There are at least three more two-disc sets of art, with about 60 different frames with up to 20 separate pictures per frame – Superheroes, Science Fiction and Funny Figures. All American politics culture is here.

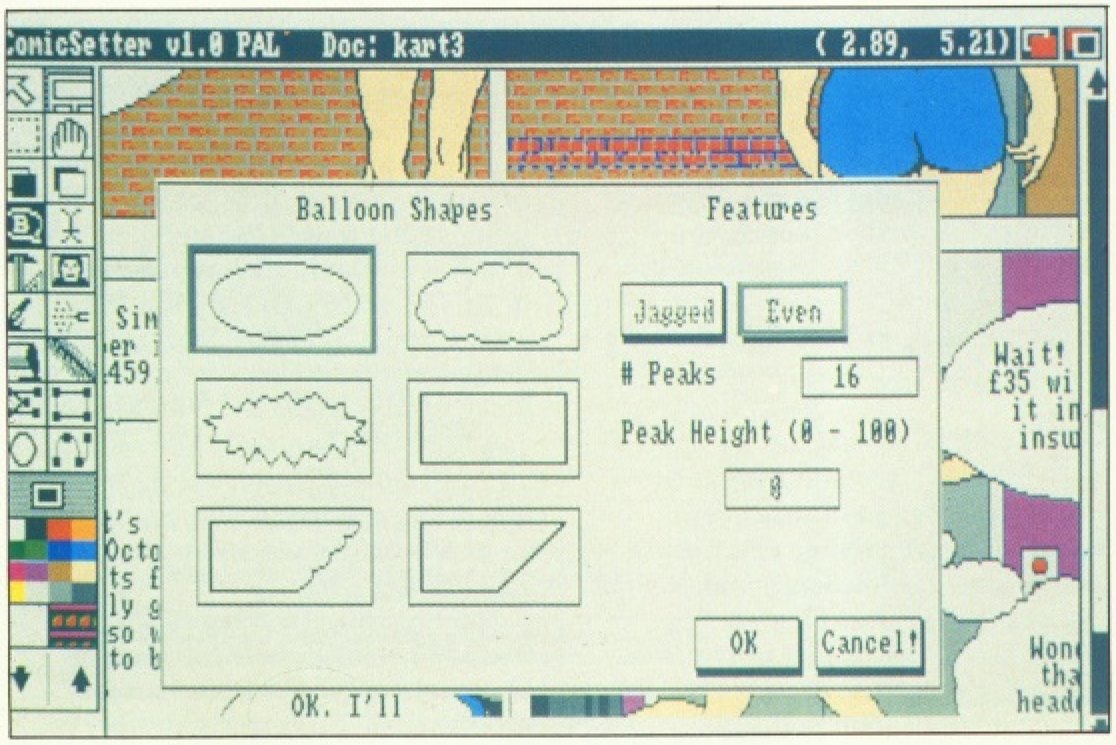
When the picture appears in a window it can be clipped out by lassoing it with a line drawn around the relevant bit, or a rectangle corresponding to the space available in the frame can be moved over the artwork.

Since most of the pictures provided don't fit in the window, if the pointer is moved off-window the graphics scroll in from that edge. This is an odd mechanism that works very well once the initial idea is grasped; ComicSetter uses it often when a window is too small for the graphics it's displaying.

Once a picture is in a frame, the fun begins. There's a gadget with a B in a speech balloon, which even a nitpicky reviewer can understand. Select this, drag out a rectangle on the frame and a balloon appears. This can be in several styles – chosen by double-clicking on the gadget – standard oval speech, plumpy "thinks...", clipped rectangle for titles and spiky for "voice from the radio".

In the fine tradition ComicSetter is establishing, the ardent balloonist can even define the number of peaks in the spiky and thinks formats. Text is then typed in, again in one of several fonts (the usual gemstones and a couple of comicbook lettering specials, which can be used in any other application... aren't standards wonderful). Bold, italic and underline can be mixed, together with some formatting commands like newline. Text is automatically positioned for the best fill.

By holding down Ctrl and clicking on the speech balloon, a tail can be drawn out to the mouth/closest applicable alien orifice of the speaker. Instant, perfect speeches.



User-definable speech bubbles

SPEECH balloons are structured graphic items, whereas graphics bitmaps are unstructured. The difference is that all ComicSetter knows about the latter is their size, whereas the structured items are displayed from a set of details about the start and end of lines, the radius of curves and so on.

Structured items take up less memory as a rule than bitmaps, and can have their fundamental structure changed. Bitmaps can only be edited by setting pixels or drawing lines on top of them, although ComicSetter

can flip them horizontally or vertically and resize them – an amazingly useful way to neaten up a comic.

Onto the frame with the figure and the speech balloon more pictures can be layered, some text can be added, all the individual items can be moved around by the usual select, drag with the hand pointer and drop, and freehand graphics can be tacked on.

The draw/paint capabilities of the program are extensive. Squares, circles and other polygons can be created and filled with colour or a pattern – there are 25 patterns, and I couldn't find a way to edit/create new ones.

UNUSUALLY, Bezier curves are provided. These are curves defined by a set of four points to which the computer fits a smooth curve as best it can. The manual gives up a little on describing exactly how this works, recommending – as any sensible reviewer would – 10 minutes experimentation as worth any amount of earnest text.

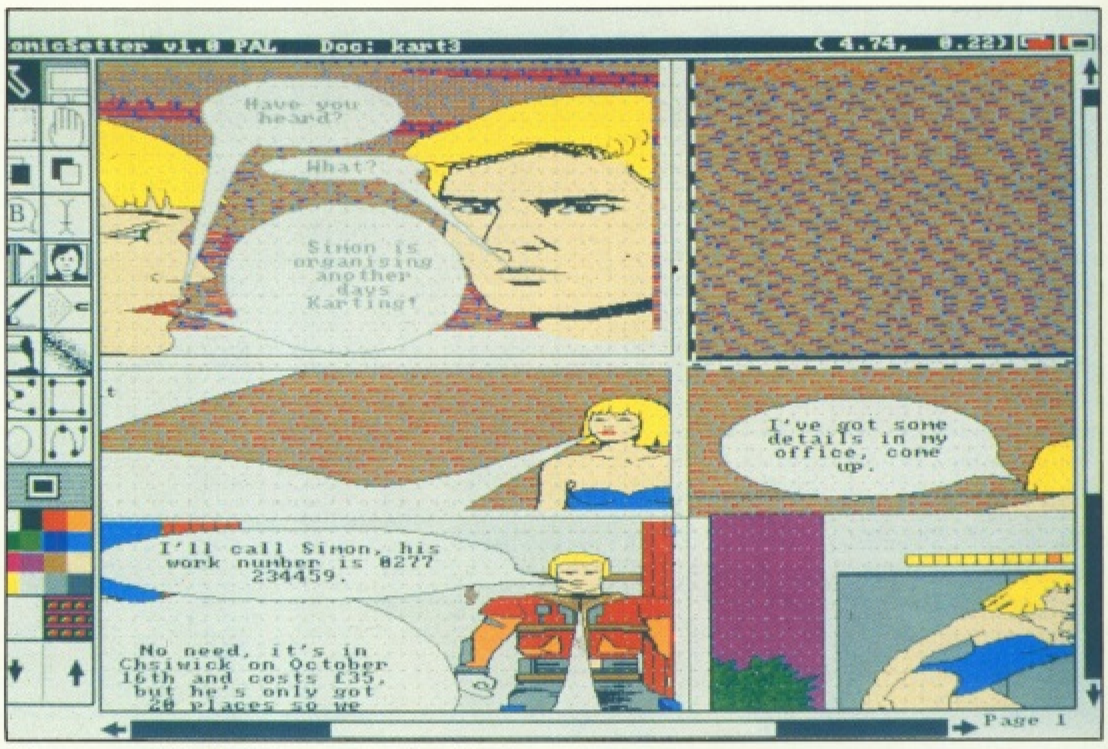
There are airbrush and smear tools for fudging the issue, and a paintbrush to make fine changes. Once any of these tools have been used, the results are part of the bitmap and cannot be individually altered or deleted. There is a single-step Undo command, which can sometimes extricate the fumblefingered. Sometimes.

The manual recommends frequent savings to disc of work in progress, a sentiment strongly endorsed as often a naff idea only comes to light 30 minutes later when undoing the damage is unthinkable.

Large-scale changes to finished pages are possible by using the Edit command menu; items can be cut, pasted, copied, aligned, grouped together for a quick move, in short anything you might want to do can be done. They've thought of it first.

The only gripe in this area is the single-item Paste buffer. It would be nice to maintain a short list of cut items to work from. Something of the sort can be synthesised by careful use of the save command, but it's not easy to avoid mistakes. That's my excuse.

The complete page can be displayed in various ways. All at once is useful for an overview of the general layout and flow of the visuals, although there is nowhere near enough resolution to make out words or picture contents. From there, the page can be magnified by 50, 100 or 200 per cent; the 100 per cent being the most useful for working within a frame and the 200 per cent good for individual pixel picking. Interlace can be turned on or off at will; on for crystal clarity with a headache within five minutes or off for flickerfree work and eyestrain within 10.



You can quickly build a page with Clip Art



Much more fun than regular text

There's a memory limit, depending on the amount of grunk onscreen, of about two/three pages. ComicSetter has a page caching feature, which by shuffling finished or otherwise inactive pages off to disc makes the only limitation to comic size the spare space on the floppy or hard disc.

PAGES or panels can be saved as IFF files, which means such luxurious special effects as your favourite paint package can furnish can be used. ComicSetter makes good use of the graphics-oriented environment the Amiga provides in general; it is, of course, a well behaved application and lives peacefully with whatever desktop doobries normally inhabit the memory.

The final stage in any comic's life is, of course, the printing. ComicSetter comes, as mentioned, with bits of Workbench 1.3, namely the printer drivers. These include better laser printer support, as well as such salivatious beasts as the Xerox 4020. There are many printing options, to do with page size, kind of greyscaling to convert colourful graphics to monochromatic output and such familiar themes.

Unfortunately, the Epson drivers on my copy of ComicSetter failed to drive my printer into anything other than a muted clicking; however a new set of drivers from the most recent 1.3 Workbench cured the problem.

AND since ComicSetter is quite happy to work with the humble Epson-compatible £150-and-it's-yours-John printers that infest the face of the planet, it is not impossible to finish the opus at home, then strike a deal with the local computer dealer to let you churn out a polished product on a Saturday morning on his Laserjet in exchange for some fancy display material. Who knows, you might convert an IBMhead into an Amigalover, because there's no IBM PC in the world that can do what an expanded Amiga 500 with ComicSetter does.

The final bit of the manual, called Comic Tips, is a small collation of hints to help the final product look professional. There are a number of ►

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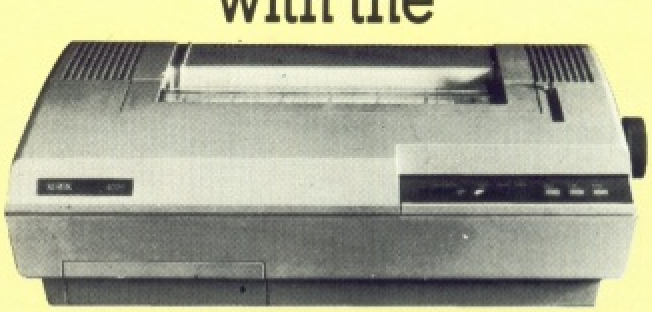
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◄ American books, available from specialist booksellers like Forbidden Planet, that say much the same thing; how to produce a smooth flow of images that direct the reader's eyes and build up to a strong climax, how to suggest time passing or changes of plot. It's not nearly as popular a field of study over here as it is in the States, where comics are taken seriously by a lot of people.

THAT then is ComicSetter, at least in outline. There are a lot of unmentioned details, most of which are nice and just what you want, just when you want them. To cope with all the things that can be done to an object, there are a number of non-obvious special tricks but these are necessary and once learned come naturally.

This is, alas, version 1.0, and this shows occasionally; graphics did get corrupted from time to time (slightly, nothing unfixable, but odd), the pointer stayed in Zzzz mode during menu selection, options – mostly bitmap editing – were unselectable until an unconnected action woke up some slumbering subroutine, and on one occasion Cut and Paste put the mouse into a drunken stagger with nothing happening for five minutes. Then I was treated to an instant replay of all the things I'd tried to do in those five minutes, after which all was well.

This might sound frightening, but apart from the last incident ComicSetter remained usable and fun – boy, is it fun – and at no time did it lose data or crash.

According to the About... menu item, there have been eight people working on ComicSetter, and they've been at it for quite some time. Apart from amazement that anything coming from a programming team that big hangs together so well (these guys must love comics), I'm impressed. It's a wonderful program, capable of wonderful things. More than that is up to you.

As for me? I always wanted to be an underground artist in the '60s... the '90s will do just fine.

REPORT CARD

ComicSetter
GoldDisk/HB Marketing 0895 444433
£69.95

USEFULNESS ....
Not the kind of thing you'd use for writing to the bank manager but great for sending letters to friends.

EASE OF USE..........
Guides you slowly with well chosen defaults. Would benefit from a longer tutorial section and more explanations.

INTUITION.............
Opens up a new workbench, multitasks perfectly but is very ram hungry.

SPEED....................
Re-drawing frames is time consuming, but probably as fast as can be coded.

VALUE ....
Seventy quid for a program which appeals so much to younger users is a lot. For a top notch DTP program it is a bargain.

OVERALL *84%*

A good score which could earn another 10 per cent by fixing a few bugs and cutting the price.

Bookcase

The Amiga is a powerful beast, and there are plenty of books explaining how to exploit it. Our team of experts takes five

Using Deluxe Paint II by Steven Anzovin.

DELUXE Paint II is probably the best art program yet to be released for a home computer. It offers the user tremendous graphics power while at the same time maintaining a user friendly environment. Because of this, it can appeal both to the total computer novice and the experienced computer artist, not to mention those budding artists who are unfamiliar with computers.

However, even the easiest to use program can appear a little daunting when you first load it, especially with one as complex as Deluxe Paint II. But not to worry! A book exists that will dispel all your fears and banish all confusion. No more will such things as rotating brushes and perspective fills be shrouded in mystery. The book Using Deluxe Paint II by Steven Anzovin is an essential guide to doing just that. It has a friendly, readable style and gently tutors the reader through all aspects of Deluxe Paint II's features.

Although versions of the package exist for the Amiga, the Apple IIGS and the IBM PC, this book only deals with the first. Since it takes pains to explain various machine specific features, this limits its value to the IBM PC user. Despite this however, most of the book is useful regardless of which machine you're using.

Anzovin starts with some fairly basic introductions to the program environment, the nature of computer graphics, and the advantages and disadvantages of using a computer for artwork. It also mixes in an introduction to art concepts and how the computer can take the pain out of tricky freehand art constructs such as circles, ellipses and straight lines.

If you find this introduction too simplistic, the author suggests that you skip ahead to the more involved chapters. Although some may find introductions of this nature a little patronising, I would disagree. Even an experienced artist or computer user might find something new, even fundamental.

After the introduction the book talks the user through the use of the different graphics utilities of the program. These are what sets Deluxe Paint II apart from all the other arts packages. The sheer power and flexibility with which you can manipulate your artwork, both as a whole and as specially captured areas, is incredible.

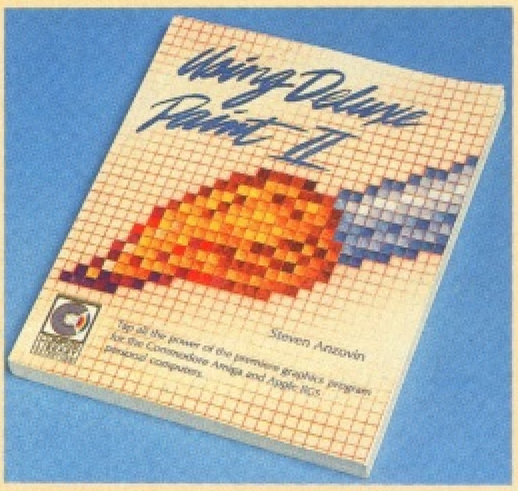
The book uses worked examples to take you through topics such as the custom brushes, use of colour, drawing tools, text, patterning and perspective. It finishes with a step by step guide constructing a picture using many of Deluxe Paint II's special features.

The use of brushes, perspective and perspective filling are about the most complex features of the program to master and use to full effect. For the user who likes to be spoon-fed information, this situation is ideal. It is good to see a book where no aspect is glossed over.

I have only one serious complaint, and this concerns the description of aliasing and anti-aliasing, which is weak. The book doesn't really explain what anti-aliasing is, and also how very significant an effect it has on any form of computer artwork.

Since aliasing – the staircasing effect – is the biggest gremlin of any graphics system, the book should have devoted a lot more time to explaining what it is and how to reduce it.

The division of the work area – the monitor screen in this case – into finite areas of colour (pixels) is the primary difference between



conventional and computer artwork. Aliasing is the most immediate by-product of this media transition, and as such deserves close attention.

There are a few other minor weaknesses in the text. The chapter on use of colour could have been more. Although the book refers to the emotional impact of colour and how powerful this aspect can be, I felt that more could have been said about the physical nature of light and how it interacts with the presence and lack of an atmosphere to produce the colours we see in everyday life.

Also, the human eye loses sensitivity to colour as the light level is reduced, and so as night falls, the colours we perceive fade to black and white. None of these facts were mentioned.

This is on the whole a very well thought out and well presented book. I would say that for someone just entering the realm either of computers or artwork using Deluxe Paint II, it is a must.

For the experienced computer user or artist using the program for whatever reason, the book is definitely well worth considering as your next purchase. Deluxe Paint II took the traditional agony out of conventional artwork and gave new scope to artists everywhere.

Christopher Humphries.

AmigaBasic Inside and Out by Hannes Rgheimer and Christian Spanik

AFTER seeing the name Abacus on the cover of this book I must admit I started reading with much trepidation. This American publisher has produced a large number of books about the Atari ST, all translated from German originals, the quality of which varies from OK to poor. This is the first Amiga book of the same pedigree that I have seen but I'm pleased to say that this is a quality product and genuinely useful.

There are more than 500 pages, with nearly 400 devoted to tutorials covering a range of AmigaBasic topics. The opening is aimed at the raw beginner, someone who has used neither an Amiga or any Basic before, though I feel readers with no previous Basic experience at all will soon get out of their depth. The authors start slowly enough, but dive into more advanced Basic topics very rapidly – arrays and multi-dimensional arrays get no more than a couple of paragraphs, for example.

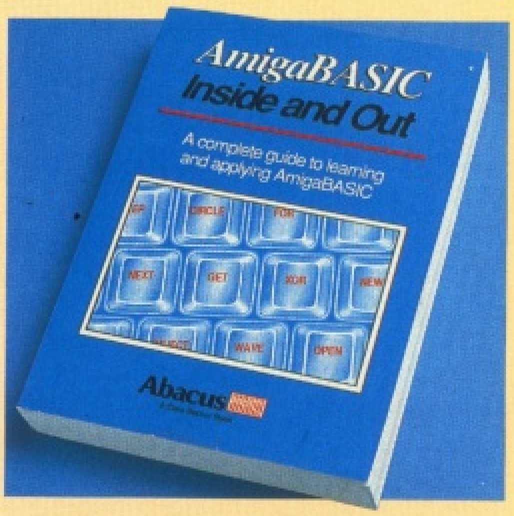
Assuming you have some Basic experience, the introductory sections describing the use of Workbench and Intuition should be enough for new Amiga owners to get used to their machines.

The beginning of each chapter has a teaser program – something short to type in and run which produces an interesting effect, though the reader is unlikely to understand it at this time. By the end of the chapter though all the relevant areas have been described in enough detail for full understanding. A good rendition of the Star Wars theme opens the sound chapter.

The main emphasis is on graphics, detailing the low-level operations together with windows, screens and even IFF file formats, culminating in a non-trivial drawing program. Other chapters detail serial and random access file handling, speech and sound, all handled in an easy and fun-to-read way, with useful programming examples.

My only reservation about the book is with some of the programming style – while line numbers are not used, labels are, together with GOSUB and the dreaded GOTOs. One of the most important features in AmigaBasic (and other modern Microsoft Basics) is the concept of SUB-programs, but these are mentioned only briefly.

There is also one very dubious



program line involving a conditional SHARED statement, something that is poor style and completely un-compilable (believe me, I know about compiling AmigaBasic).

The appendices include a complete reference section on all the AmigaBasic keywords and error messages, together with guaranteed error-free program listings. Helpfully a disc is available for £9.95 containing all the programs.

This is a very good book for any AmigaBasic programmer, both as a tutorial and reference work. I'm pleased to say that the US dollar price has been fairly converted to pounds and it's well worth £16.95.

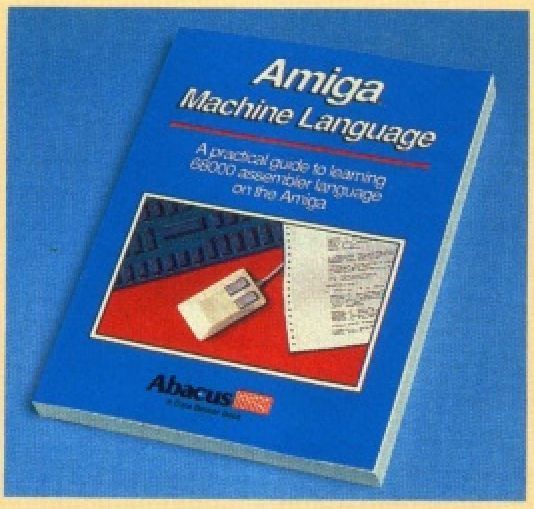
Andy Pennel

Amiga Machine Language by Stefan Dittrich

THE Amiga has brought high power, a combination of the hardware and systems software that exploits it to a large number of people. The profusion of display hacks, interesting applications, and games amply demonstrates this power. However, for the large number of users to take advantage of it for their own purposes, they must find out how to get at it.

The systems software for the Amiga has been developed with a mixture of C, Assembler and BCPL. There now exist compilers and interpreters for many languages, allowing varying levels of access to the system.

However, to take things to the limit, the solution is usually to head for the silicon and develop in assembler. Amiga Machine Language is aimed at people who wish to use 68000



assembler to take advantage of the Amiga hardware and operating system.

The book starts out with an overview of the Amiga's architecture, and then moves onto the 68000 processor. This section does not provide enough to learn all about the 68000 from scratch. Given a knowledge of programming and a bit about other processor's architectures, it would give enough to be going along with.

The next chapter explains how to use three different assemblers. The example code in the book is written using the AssemPro assembler and the text often references it. The other two assemblers covered are the Metacomco product and the K-Seka assembler. K-Seka gets a full description, Assempro a fairly simple one and Metacomco one page.

Having covered the processor and how to get code to run on it, chapter four covers simple bit bashing, not specific to the Amiga. This serves to introduce writing programs without the complications of the Amiga.

The book then starts covering the Amiga itself, starting with some of the hardware registers. The areas covered are the keyboard, timer, mouse, joystick and sound. The more powerful areas such as the blitter,

▶

◄
Copper, video generator and discs are ignored.

Having really bashed silicon up to this point, the focus moves to above the operating system. The Amiga systems software revolves around libraries, and the work needed to call these is explained. Coverage of the libraries themselves is limited. Various methods of I/O are covered – speech, screen, keyboard, printer and serial. Next comes coverage of how to access the disc, both at the file system and sector level.

A whole chapter is devoted to the use of the Intuition library. This covers the use of screens, windows, requesters, menus and gadgets. This coverage is by no means complete, but does give a grasp of the commonly used areas.

Finally, a short chapter explains a couple of more advanced areas of the 68000, namely Supervisor Mode and exceptions.

I found the style of the book to be low level, somewhat reminiscent of the days when machines were hardware and operating systems scarce. There are good reasons for bypassing an operating system, but old habits and laziness are not among them.

The coverage of the Amiga is nowhere near complete, many areas are left totally untouched, both at the hardware and operating system level.

To be fair, the Commodore documentation stands at several inches of A4 size books, and nothing short of microfiche techniques is going to get that into a 250 page book. There is not much in the way of explanation of the Amiga features being used – the style is more oriented towards "recipes".

This book will not reveal the secrets of the Amiga, but for a first dip into the system by someone who has programmed before, it is fine. To produce progams of any weight will require other texts. I was interested to note that an advertisment in the back of the book for AssemPro had the following small print: "Machine language programming requires a solid understanding of the Amiga's hardware and operating system. We do not recommend this package to beginning Amiga programmers".

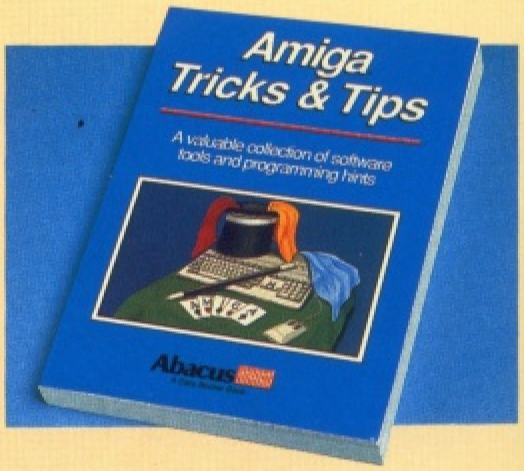
Sam Littlewood

Amiga Tricks and Tips by Bleek, Maelger and Weltner.

THE Amiga is supplied with Microsoft's AmigaBasic. This has some built-in support for the Amiga's features, but not the whole range. To really start exploring these capabilities requires a good understanding of AmigaBasic and the ability to get directly at the operating system from within it.

Amiga Tricks & Tips is intended to aid this understanding and ability, as well as briefly covering other areas of the system. It uses AmigaBasic exclusively for programming, no other language being covered.

The first chapter talks about the CLI. This is not a complete description. It covers solutions to common problems, an overview of the new CLI commands in version 1.2, and a collection of script files. The last do things like setting up commonly used commands in RAM: and implementing a simple print



spooler. This chapter also covers the startup sequence script.

Attention moves on to AmigaBasic. The first subject is writing graphics code. The technique used is to call the operating system graphics and windowing routines directly from within Basic, giving increased speed and flexibility.

A large amount of the text is devoted to example programs. Some of these, such as the full IFF picture display program, are quite powerful, providing good code for use elsewhere. The section goes to a fair

Learning C: Programming Graphics on the Amiga and Atari ST by Marc B. Sugiyama and Christopher D. Metcalf

THIS attempts to be two books in one, the first half a C primer, while the second deals with graphics algorithms. The 400 page volume is spiral bound, so it lies flat on the table making listings much easier to type in.

The C primer section is aimed at programmers with experience of Basic or Pascal and with a knowledge of the lower level aspects, such as pointers, bits and bytes. Users without such knowledge will find this section vary hard going.

As a C primer it works reasonably well, but doesn't start well: The first function listing does not agree with the text describing it, something which took me ages to work out. Complete C beginners may well give up by page 17. This was the only serious typo I noticed though, so perseverance is worthwhile.

The book attempts to be useful to both Atari and Amiga users, catering for five different C compilers. A header file is listed at the back to make the graphics calls the same on both machines. This method generally works, also allowing incompatibilities between compilers such as integer sizes to be avoided. C is not as portable as it is supposed to be.

The listings are presented in a typeface which makes it very difficult to distinguish between the = and == operators, something which any C programmer will tell you makes a huge difference. Most of the programs are large and the optional disc at £9.95 is recommended if you want to experiment with the book's graphics section.

Having introduced much of C, some of it less detailed than others, the authors start on the graphics section proper. If you want to find out how Intuition, the graphics library or the Copper works, this book is not for you – all the Amiga-specific calls are hidden away in a header file. The graphics algorithms presented are general methods for producing two

depth, covering Intuition, fonts, 3D vector graphics and palette manipulation.

The next chapter does not expose any more features of the Amiga; it is about user friendliness. This talks about, and has large amounts of code for, comunicating with users. Ideas like sliders, selection from tables, rubber-banding and animation are explored.

Chapter 5 deals with the use of AmigaDos from within AmigaBasic. In a similar way to the graphics section, the limited functionality of AmigaBasic is bypassed in favour of heading straight for the operating system. The examples implement routines to rename files, search a directory tree, read a directory listing into an array, call CLI commands and so on.

Chapter 6 dives into the internals of AmigaBasic. It discusses the format of the saved programs, and provides several long utilities. These do things like generate cross-reference listings, list variables, and display files in hexadecimal. The main coverage this chapter provides is of the various file formats associated with AmigaBasic.

A brief interlude follows, which is a short coverage of the Workbench. Included in this is how to read and write Preferences from within AmigaBasic, and coping with the Info screen of Workbench.

Icons are a target of much creativity, the next chapter describes how they can be created from a program. The example programs allow creation of icons, including icons with two images associated with them.

Chapter 9 is back on the subject of real users, and is about making programs robust in the face of possible errors. Example code is given for testing various situations, like a file not existing, or the user giving bad input.

Chapter 10 focuses on effective programming in AmigaBasic. It describes the steps needed to make AmigaBasic run the same code faster, and gives benchmark programs that show how various aspects of the code can affect speed.

The final chapters give some coverage to some aspects of interfacing AmigaBasic to the rest of the system, how to write library files allowing AmigaBasic to call code written via a compiled language and how to access the Amiga devices, in particular the sector level disc device.

The title of this book is somewhat misleading, It would be better named something like AmigaBasic CookBook. If you are using AmigaBasic then there is a lot of useful code here, but in many cases, not much explanation of what the code is up to.

In conclusion, if you are interested in getting performance out of AmigaBasic, this book will interest you. It is not however a reference or tutorial for either the Amiga or AmigaBasic.

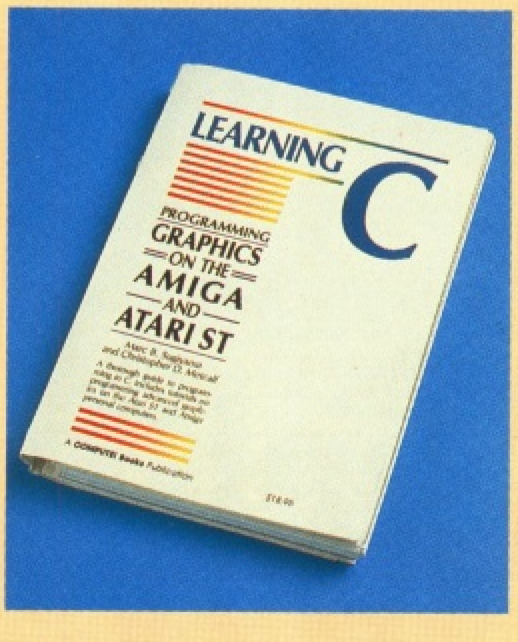
Sam Littlewood

and three dimensional graphics, shading, and hidden line removal.

A note of caution – the reader needs a good understanding of maths, particularly coordinate systems, vectors and matrices to understand the majority of the book. Don't worry if your maths has got a bit rusty, I must admit several sections caused some areas of my brain to be accessed for the first time in many years. If you haven't done O level maths don't try this book, though A level students will be OK.

If you want to know about general graphics methods, as opposed to specific Amiga features, this is a good book. It doesn't detail many alternate methods, four dimensional matrices are used for 3D objects but some arcade games get away with 3-dimensional matrices. However, the methods described are detailed both mathematically and in actual C code.

I was a little worried by the Atari ST-specific code, as it contains two serious errors, neither of which should prevent the code from working, but the Amiga code looked



fine to me.

This book does a reasonable job of introducing C and explains complex graphics operations in about as painless way as is possible, though a good understanding of general programming for the former and mathematics for the latter is also required.

Andy Pennel

Using Deluxe Paint II
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Typesetting for experts

Paul Ockenden looks at a publishing package which has been ported to the Amiga from a mainframe – and outperforms the original

WHEN I bought my first Amiga I was expecting it to be able to produce beautiful documents, using its high resolution graphics and multiple font support.

I wonder how many other Amiga owners were as disappointed as I was when I printed my first document from Notepad. The characters appeared very jagged, and lacked sharpness. Like a fool, I thought that the problem was my cheapo dot matrix printer, so I went mad and bought a laser printer, only to discover that the problem was not the printer at all.

The trouble is that high resolution on the Amiga screen becomes decidedly low resolution on the printer – even a cheap printer has a horizontal resolution of 1,750 dots, whereas the Amiga only manages 640.

I now know the solution to my problem – AmigaTeX. It abandons the Amiga fonts, resolutions and printer drivers, and in doing so produces the finest quality output I have seen from my setup. My laser printer is able to produce documents at its full 300 dots per inch, with a selection of thousands of fonts. And my dot matrix is able to produce such high quality output that I wonder why I ever bought the laser printer.

AmigaTeX is a commercial version of the TeX typesetting system. TeX was written by Prof. Donald Knuth of Stanford University towards the end of the 1970s, and is in the public domain. Versions can be found on almost every popular computer capable of supporting a megabyte or more of memory.

Radical Eye Software has taken the basic public domain version of TeX and added numerous features, making AmigaTeX one of the most useful and productive TeX environments available on any computer. It is not uncommon to find commercial versions of TeX – a quick flick though the pages of the US magazine Byte will reveal several for the PC and other machines.

Note that the word TeX isn't pronounced how you might expect. To quote from The TeXbook by Knuth: "Insiders pronounce the X of TeX as a Greek chi, not as an x. It's the ch sound in Scottish words like

▶

loch or German words like ach. When you say it correctly to your computer, the keyboard may become slightly moist".

AmigaTeX – or indeed any version of TeX – is capable of really outstanding results. It can be used for anything from simple one page flyers and CVs to complete books – pop into your local technical bookshop and inspect The TeXbook which was typeset entirely using TeX. It automatically copes with ligatures, kerning and a host of other typographical problems. It is also very good when it comes to mathematical formulae, and its hyphenation algorithms are second to none.

DON'T fall into the trap of thinking of TeX as a simple document generator such as Notepad or Word Perfect. It is a document compiler, much like one of the C language compilers – and nearly as difficult to learn in its native form. You will have to supply your own favourite editor and produce an input file for TeX, which looks not unlike a computer program in places. It then works on this input file and produces a device independent (or DVI) output file.

Using most other versions of TeX, you would feed the DVI file to a converter program which would produce output suitable for your printer. No matter what device you used for your output, the layout and fonts would be exactly the same – only the resolution would change.

The disadvantage of this method is that if you make a simple change you will have to print the whole document again to see what effect that change had. This can be very wasteful of time, paper and printer ribbons.

AmigaTeX avoids this waste by providing a screen previewer. This Intuition-based program allows you to view your document on screen at a variety of resolutions before producing your final copy. What is more, Radical Eye has provided file tracking between the TeX compiler and the previewer. Using this facility you can have TeX, your editor and the previewer all running at the same time, with the previewer automatically displaying the output from the compiler without any action by the user. (For the more technically minded, AmigaTeX also fully supports ARexx, allowing a completely integrated development environment.)

While preparing this review I paid a visit to the local university – all universities seem to use TeX – to see what they thought of AmigaTeX, and I discovered that they were already using it. Apparently they used to use TeX on a VAX minicomputer, but when they got a Macintosh they started using MacTeX exclusively. However since the university bought a copy of AmigaTeX the Mac has been neglected, and students are queuing up to use the Amiga.

They are using an add-on called LaTeX, which takes most of the heartache out of producing a document. You just state the document type – thesis, report, article, letter – and mark the beginning of chapters and sections. Everything else is taken care of for you. LaTeX is included with AmigaTeX package as standard.

There is no documentation on the TeX language with the AmigaTeX package, just like you don't normally get a book on C with a C compiler. For that you'll need a copy of The TeXbook or LaTeX, a document preparation system. However, a well written manual is provided giving details on installing and running the compiler and previewer. The manual is laser printed and is supplied in a standard ring binder (the manual is also provided in TeX source on one of the discs).

Depending on which printer driver you order, TeX comes on up to 20 floppies. At first you will be doing quite a lot of disc swapping, but due to a caching system built into AmigaTeX, this is reduced a lot after using the system a few times. Most of these discs contain fonts, both for the previewer and the printer drivers. Interestingly, Radical Eye uses a dual colour coding to identify the discs, and this seems to work quite nicely (*"please insert disc brown.blue in any drive"*).

ALTHOUGH you can use AmigaTeX on a 512k machine, I would suggest that you really need 1Meg (AmigaTeX is very happy on a hard disc machine). Drivers are available for the QMS KISS, QMS SmartWriter, HP LaserJet Plus, and PostScript laser printers; The Epson



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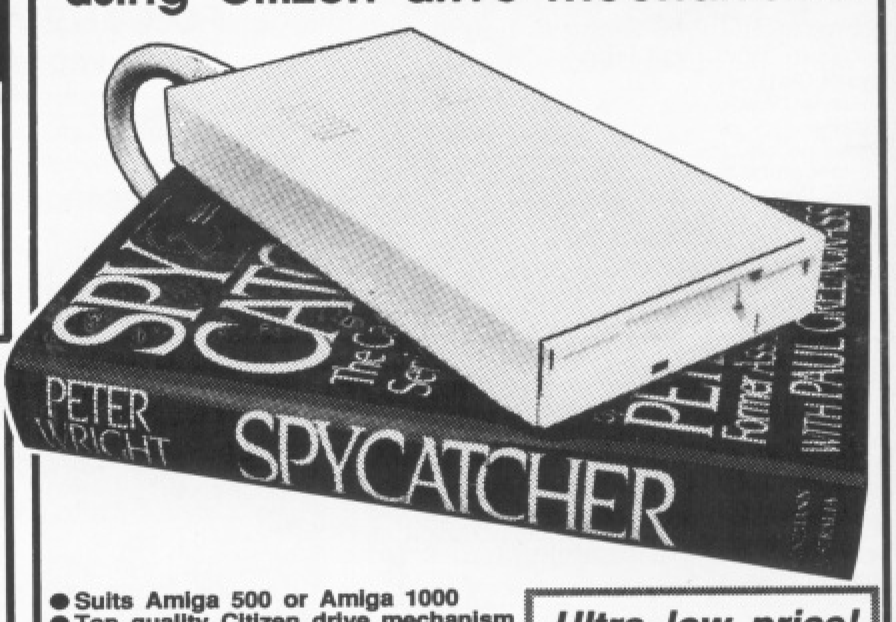
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LQ series, the Epson MX series (including the JX, FX, EX, PX, RX, TX, and so on) and compatibles, the Citizen 150-D, the NEC P6/P7 series, and the ImageWriter II. Other drivers are developed on request.

There is no UK supplier of AmigaTeX at present, all sales and support being handled from the USA. The reason is that Radical Eye is only willing to grant distribution rights to a company which is able to prove a high degree of expertise in both TeX and Amiga-related topics, and so far it hasn't found such a company in the UK.

I found both the sales and support service was better than that provided by most companies based in the UK. All letters seem to be answered by return of post, and Radical Eye usually sends out updated discs to all registered users the same day that bugs are reported.

I would thoroughly recommend AmigaTeX to anyone looking to produce top quality documents on their Amiga. It may take a bit of effort to create your first few documents, but the effort is well worth it.

REPORT CARD

AmigaTeX
Radical Eye Software Box 2081
Stanford CA 94309 USA.
$200 for AmigaTeX, plus $100 per printer driver.

USEFULNESS
The ability to produce documents at the maximum resolution of a printer is something which has been missing from the Amiga.

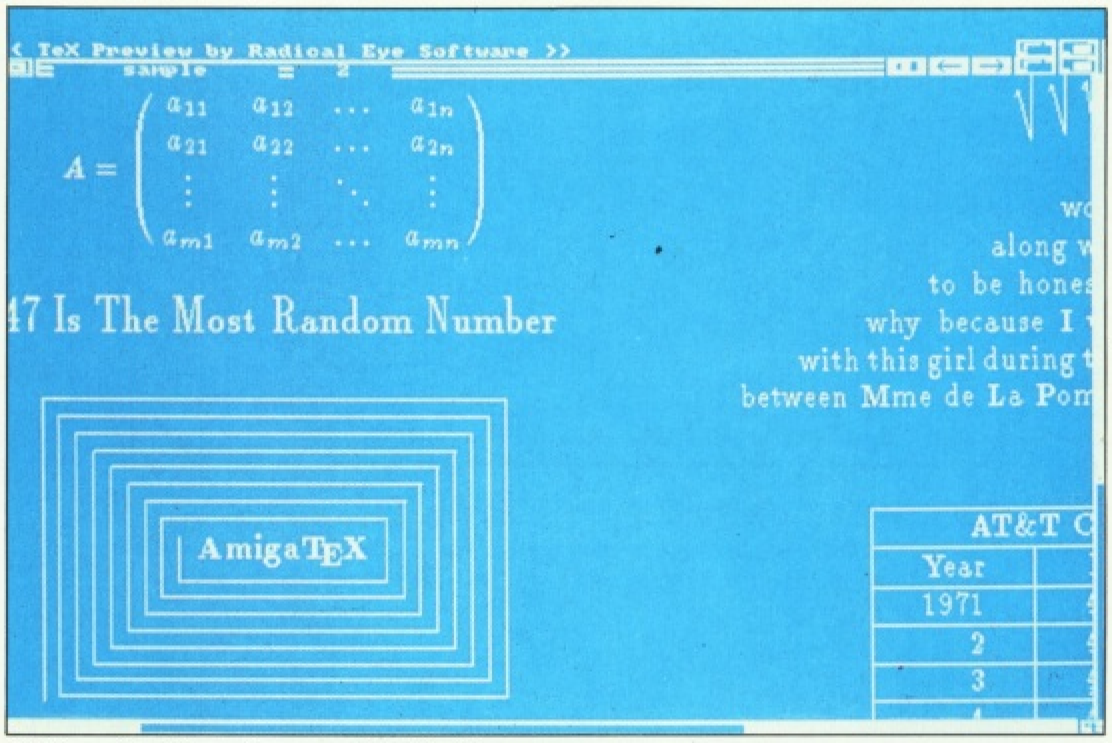
EASE OF USE
Although the previewer and LaTeX help a bit, there is no doubt that TeX takes some learning.

INTUITION
The previewer is well integrated into the Amiga environment, but the compiler and printer drivers remain CLI based.

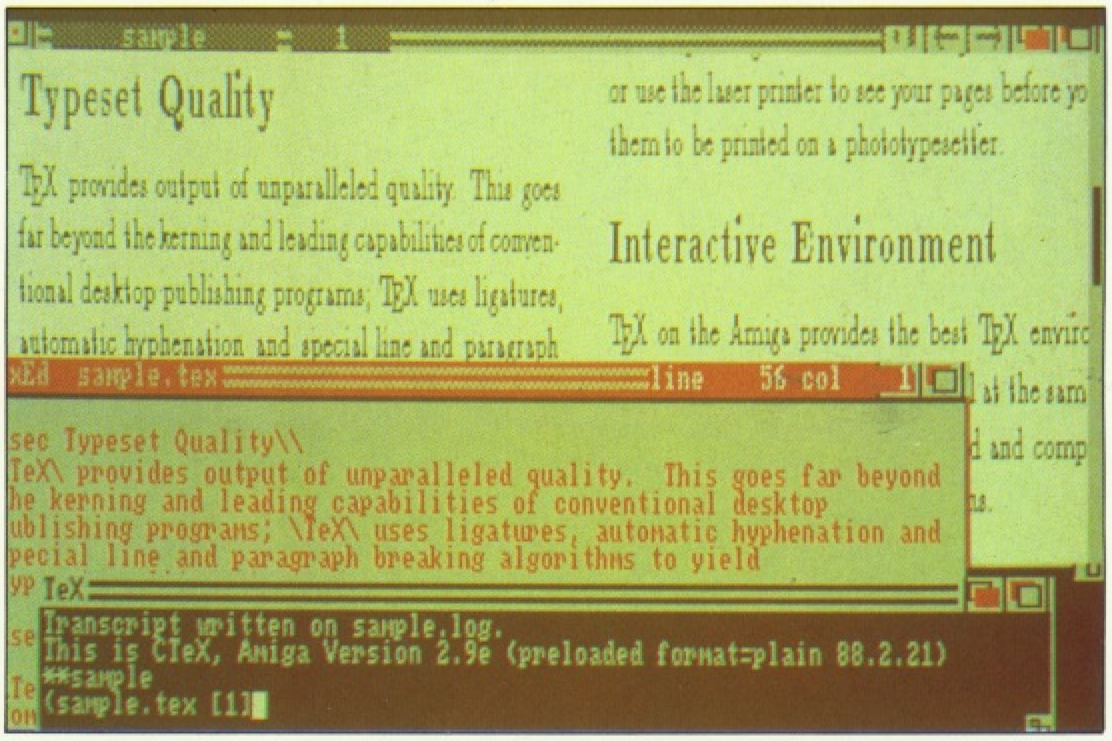
SPEED
Much of AmigaTeX has been re-written in assembler, and I found it ran faster than TeX on the VAX at work!

VALUE
$300 is not out of keeping with other commercial versions of TeX for PCs and the like, and this version is one of the best available.

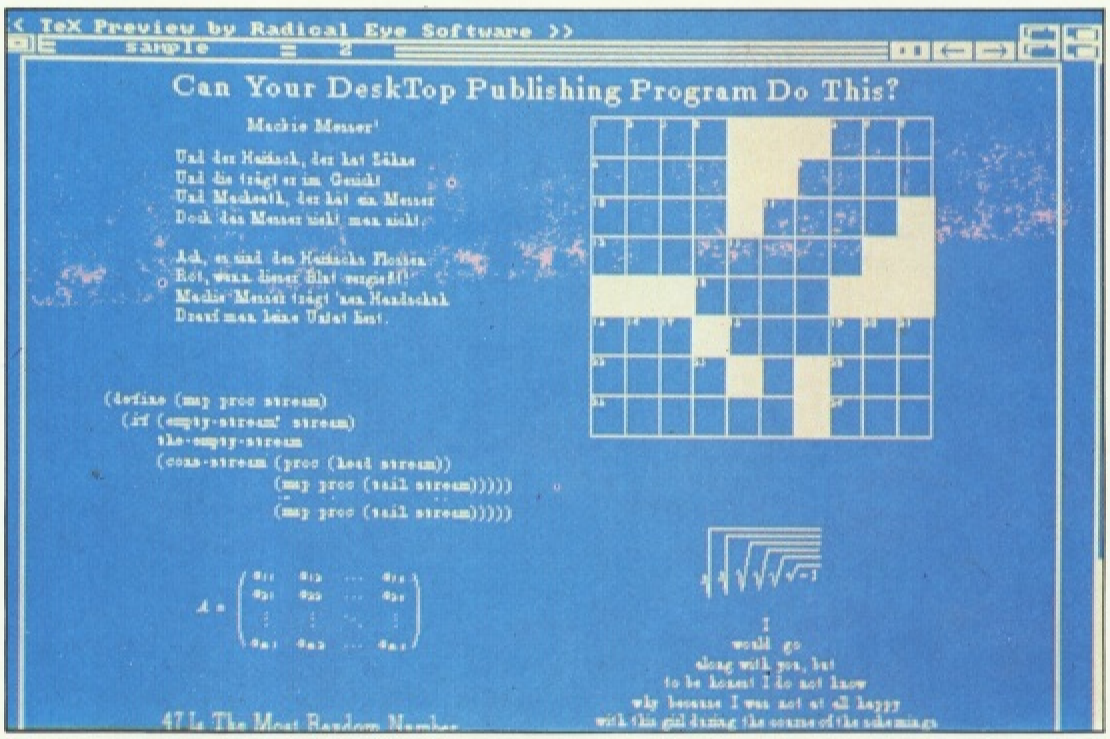
OVERALL 85%
An impressive product. A must for any business user, or anyone job hunting in need of a good CV.



Mathematical formulae are a Tex forté



LaTex reduces the problem inherent in a complicated script language



A page from the sample file



Mission Control

Sam Littlewood reviews ARexx and WShell, programs which give your micro the script-like control to which mainframe users have become accustomed

THE two packages reviewed here do not produce attractive pictures or mind-bending sounds. So can two text based, silent products really be something to talk about? "Yes" is too short an answer to be called a review.

ARexx is a faithful implementation of the Rexx language which was designed by M. Cowlishaw of the IBM UK Scientific Centre. A feature of this design was the active feedback from users, resulting in an easily learnt and used language.

The language is interpreted, and is aimed at writing macro scripts for the basic operating system or other packages. ARexx is a compact 30k library, written in assembler. It bears no comparison to the usual cryptic script languages; it is a clean and simple language that holds no horrors for anyone who has dabbled in programming before.

An aspect of ARexx that makes it not just another (albeit good)

language is the ability to communicate with other packages, which can invoke a Rexx program, just as a Rexx program can send commands to the package.

WShell was developed by the same person as ARexx, and is implemented in the same manner, in this case 10k of assembler. The Amigados CLI is not ideal for regular use. The user interface is little different from that of a paper teletype, and speed is not a feature. WShell is one of several products that aim to rectify this problem, others being the Metacomco Shell, the new shell on Workbench 1.3, and several public domain programs.

A FACILITY that WShell is totally lacking and that most other CLI replacements provide as their main feature, is line editing and a history mechanism. This is not a gross omission – such features are handled by a separate package, the shareware program called ConMan. This was written by the same author as WShell and ARexx, adding line editing and history to any CON: window, whether it is WShell, the old CLI or your own program. Conman is provided with WShell and has been availiable through the Fish discs for some time.

ARexx comes on a single disc accompanied by a 150 page manual. It does not require two disc drives or extended memory. Installation is simple, well documented and there were no problems. The visible aspect of ARexx is a set of small commands which are copied into the C: directory. The functionality is provided in the form of shared libraries which are copied into the LIBS: directory.

THE ARexx interpreter is not run for every script; it is based around a single process called the resident process. This is ususally started at bootup, and lurks in the background until needed.

The resident process can handle the execution of many Rexx scripts at once by virtue of multiple tasks. A command rx submits a Rexx script to the resident process. The interpreter does not include an interactive means for typing scripts in. They have to be created using a text editor and then sent to the interpreter. This script is

```
/*
* Rexx uses C style comments
*
* The 'say' insruction simply prints out it arguments
*/
say 'hello, world'
```

Listing I

```
/*
* A simple variable -
*/

say something              /* prints SOMETHING */
something=42
say something              /* prints 42 */
say 2*REVERSE(something)   /* prints 48 (REVERSE reverses a string)*/
/*
* A compound variable -
*/
something=SAM
Surname.SAM = 'Littlewood'
say Surname.something      /* prints Littlewood */
```

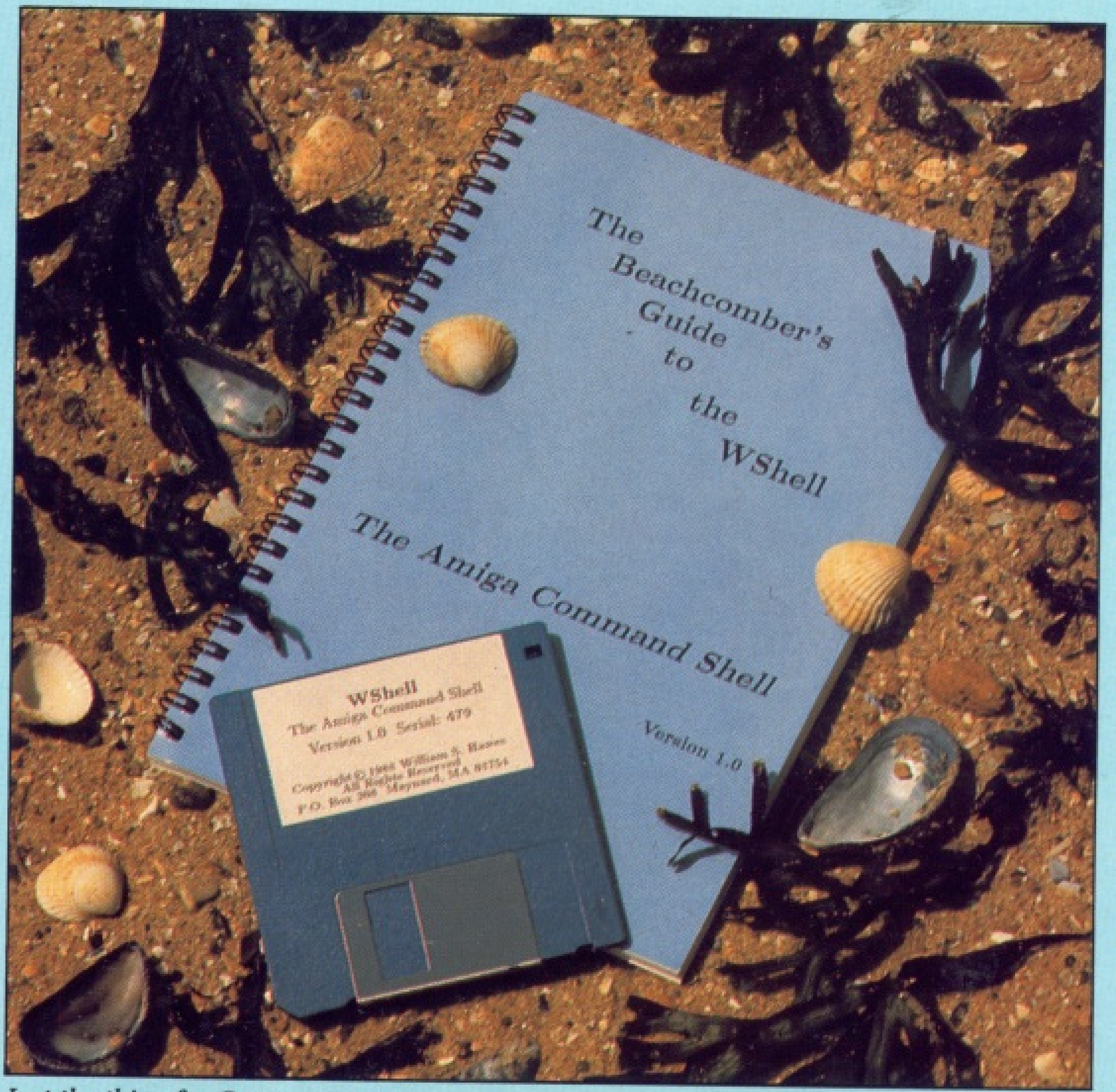
Listing II

then interpreted, possibly concurrently with other running scripts. The 30k occupied by the resident process does not have to be duplica:ed for each new script.

In the tradition of first programs Listing I shows a simple rexx program in the file greet.rexx.

This can be executed from the CLI by typing rx greet, and providing the resident process has been started it will print that well know greeting. The rx command is not necessary if WShell is being used, "greet" could be typed, and WShell will recognise it as a Rexx script and submit it to the interpreter.

Like most langauges, Rexx has variables. There is however, only one ►



Just the thing for C programmers

◄

sort of data, a string of characters. Numbers, integer or floating point are stored as a text representation, Such as 42.3. The interpreter decides the meaning of the data according to the context in which it is used.

There are two sorts of variables, simple and compound. Simple variables are just that. Compound variables are like multi-dimensional arrays, but are indexed by arbitary strings as opposed to integers.

THE syntax for referencing a compound variable is a base name followed by the indexing symbols separated by dots. Variables do not require declaration or initialisation; an uninitialised variable has the value of its name as an uppercase string. Listing II shows some examples of variable manipulation.

Control of execution flow is of the style found in most high level programming languages, the familiar IF...THEN...ELSE works as usual. Execution involving blocks of code such as loops is based on one pair of instructions, DO and END. The DO instruction can be followed by information that describes what sort of block this is. The SELECT instruction provides something akin to a case or switch. This is shown in Listing III.

Loops can be based on iterating a variable, continuing while something is true, continuing until something is true or forever. In addition, the loop can be broken out of, or the next iteration can be skipped to.

The examples have used an instruction for input – PULL – which is the tip of an iceberg called parsing. A string for instance, a user's input, command line arguments or a variable, can be broken up and the individual pieces assigned to variables. The breaks can be at spaces or particular columns.

ANOTHER area that the examples have touched upon is that of built-in functions. The large number of these cover a wide range of areas from string handling that leaves Basic in the cold, converting data from binary to hex to strings, manipulating files, to using a pool of variables common to all Rexx programs.

Subroutines and functions are part of the language, and can have their own local variables. A subroutine or function indicates that it would like local variables by using the PROCEDURE instruction. Listing IV shows that it is possible to select some variables that will not be local, but can be imported from the calling environment.

People do not write perfect programs, and ARexx has a debugging and tracing system to cope with this. The system is conceptually very simple – tracing can be turned on for various events, such as all instructions, errors or calls.

When the appropriate event occurs the line or data is printed out. This can be to the same window as the program was run from, or a separate debugging window. If interactive debugging is turned on the user is prompted to type something. Just pressing Return will cause the program to continue.

Typing = will re-execute the instruction. Anything else is taken as an ARexx command and interpreted, and the user is prompted again. This allows variables to be printed and modified and the errant code re-executed.

Interaction with other applications takes place through the Amiga's message ports. ARexx creates a message port called REXX, and any program can call it up. Sending the name of a script causes the ARexx resident process to look for the script, either in the current directory or the REXX: directory if it is assigned. It then starts a new task executing that script. It is also possible to send a Rexx script as a message itself – useful for simple operations.

If a program provides a named

►

```
/*
* Example of control of flow
*/
say 'Enter a number greater than one -
pull val .   /* PULL reads data from the input into a variable */

select
     when DATATYPE(val) ~= 'NUM' then
     say 'That was not a number'
     when val <1 then
     say 'That was less than one'
     otherwise do
          say 'Wow - you gave me what I asked for'
          do i=1 to val
               say 'Loop:' i
          end
end

say 'Now, type "YES" -'
do until j = 'YES'
     pull j
end
```

Listing III

```
/*
* Example of subroutines and functions
* Output is:
* FOO is: Main-foo BAR is: MySub-bar
* MyFunc returns 8
*/

foo='Main-foo'; bar='Main-bar'
call MySub
say 'FOO is:' foo ' BAR is:' bar
say 'MyFunc returns' MyFunc(4)
exit

/*
* Subroutine, all its variables are local, except for £bar'
*/

MySub:
     PROCEDURE EXPOSE bar
     foo='MySub-foo'; bar='MySub-bar'
     return
/*
* Function, no PROCEDURE, so all callers variables are exposed
*/

MyFunc:
     arg i      /* Grab the argument into i */
     return 2*i
```

Listing IV

◄
message port, Rexx scripts can direct commands back to the program. This allows applications to use ARexx as a script language, having only to provide the specialised functions particular to the application, not a whole language.

In addition, if several applications support ARexx a script invoked from one can draw upon the resources of them all to get a job done. A script invoked by an editor command could grab information from a database, chew it about, and then put it in the text being edited. Listing V shows a script which uses a compiler driver and editor.

Writing your own programs to use or be used by ARexx is a relatively simple task. The necessary include files and libraries are provided, and the manual covers the process in detail. Typically, 1 or 2k of code may be needed, possibly a lot less. The languages supported are C, Benchmark Modula-2 and assembler.

```
/*

* Try to compile the named C file, and then jump to the first
* error. Usually invoked from editor.
*/


arg compileargs /* grab the arguments */

/*
* ADDRESS selects a port to send commands to
*/

ADDRESS 'CC'
'compile' compileargs  /* Tell the compiler driver to go*/
'next-error'   /* Ask the compiler what the first error was */
if result = '' then exit /* If none, go away */
parse value result file ':' linenumber errortext
ADDRESS 'UEMACS' /* Start talking to the editor */
'find-file' file
'goto-line' linenumber
'write-message' 'Error:' errortext
```

Listing V

AREXX can be extended by writing function libraries in one of the above languages which behave as if they were the built in functions. Again, the necessary files and documentation are provided. ARexx comes with two of these libraries donated by users. One is an extended maths package and the other an interface to the ARP library.

One of the most useful things in the ARP library is a general purpose file selector window. When called a function pops up a window and allows you to mouse around and select a file. The name of the file is then returned from the function.

The ARexx manual is excellent. It was produced on an Amiga using AmigaTeX, and is clear, concise, and covers all aspects of the langauge. In relation to the price of the product it really gives cause for thought about the quality of manuals on other, far more expensive products.

ARexx is a well documented and robust implementation of a good language. It fits into the Amiga system extremely well, and does not occupy much in the way of disc space or memory. It is fast – obviously not as fast as a compiled language – but much better than AmigaBasic.

That still leaves the question, do you need it? If you are programming on the Amiga, then I would wholeheartedly recommend buying it. If you are more of a user then things become less clear. The number of packages that support it is limited, but likely to grow. On its own, it does provide a good fast language that is easy to use for text-bashing and calculations.

If you are inquisitive and bored with AmigaBasic, I would recommend it. If you use the Amiga solely to run applications, then it is worth buying ARexx when the applications you use support it.

WShell is provided on a single disc with a 60 page manual. The installation is similar to that of ARexx, some small commands need to be copied into the c: directory, and a shared library is copied into LIBS:. A setup program is included to do all this for you with no problems. WShell uses a shared library, so each new command window does not require a new copy of the code. However, the shared code is still only 10k; WShell is not memory-hungry.

The most noticeable thing after installing the program is not Wshell itself, but ConMan, the replacement console handler that provides line editing and a history mechanism. The current line can be edited using the cursor keys, words can be deleted and the cursor moved a word at a time.

Previous commands can be retrieved and edited by using the Up and Down cursor keys, as well as by searching. Pressing F6 after typing a few letters will go back in the command history and try to find a command that starts with the same letters.

A particular bonus for those who use other computers is that ConMan handles Control-S and Control-Q, stopping and starting the output.

The ConMan features are available to anything that uses a CON: window. It also allows much greater control over the style of window opened, windows can be borderless, have a Close gadget, not have a sizing gadget and so on.

WSHELL itself is compatible with the existing CLI, and will respond to the same commands and run the same programs. A new WShell is create with newwsh in much the same way as newcli. Newwsh can be given arguments FROM and CMD. If FROM is used a named file is executed before commands are read from the user.

CMD specifies a command to be executed directly. Newwsh can have a .info file associated with it, and both FROM and CMD can be put in the option list. Using CMD allows batch files to be run from icons. Since WShell can comunicate with ARexx, this means that ARexx programs can also be run from icons.

WShell provides aliases, for example, lnk could be an alias for "blink lib:c.o main.o rest.o to foo lib lib:lc.lib lib:amiga.lib". There is no need for a separate batch file. At a simpler level, it allows abbreviations of common commands such as f to dir, cat to type, mv to rename and so on.

A feature of the old CLI was that *all* of the commands existed on disc. The time taken to load them resulted in a poor performance. One solution was ►

ARexx compatible programs

The usefulness of this aspect of ARexx is dependant upon how many applications provide an appropriate interface. Currently, the following products are known to have ARexx interfaces:

AmigaTeX: Typesetting package
TxEd-Plus: Text editor
Cygnus-Ed: Text editor
C.A.P.E.68k: 68000 development system
MicroFiche Filer Plus: Database
WShell: CLI replacement
Magellan: AI expert system

Precision Software will be providing ARexx support for Superbase Professional, and are considering it for Logistix. In addition, several public domain programs have the necessary support.

◀

to put commonly used commands in RAM:, but that took up precious space.

WShell has two speedups. Some commands are built in, such as IF, CD STACK. The second speed-up is resident commands. Putting commands in RAM: is fast, but wastes space, the file occupying memory in RAM:. When it is executed, it is copied out of RAM: and more memory is allocated for the executing copy. In addition, every instance of the program running has its own copy of the code.

YOU can write programs so that all running copies share the same code but have separate data, and the code is the only copy of that code in memory. These programs can be made resident. They are loaded once into memory, and in effect become built-in commands. Most of the CLI commands can be used this way, with an immense performance increase.

WShell has Some extra built-in commands, in particular, PUSHCD, and POPCD. These allow you to push the current directory on to a stack, move somewhere else, and then pop the old position back. This is great for wandering off for a quick explore, without having to remember where you were when you started.

Previously, commands could have their input and output redirected to files with >, < and >>. WShell adds piping with the | symbol. The ouptut of one program can be redirected to the input of another, concurrently executing, program. For example, the output of a compiler could be redirected to a program that displayed things a page at a time, having had everything but the error lines removed with the line compile find Error pager

The prompt used with WShell is highly flexible, it can include a wide variety of information, such as the current directory, the time, the return code of the last program, colours and so on. If this is not enough, a program can be executed as part of the prompt. This could be used to show the status of some background task.

IT is possible to put this information in the title bar of the window. For example, the CLI number and the current directory. A particularily good aspect of WShell with respect to windows is that it can handle the Close gadget, having the effect of EndCLI.

An added bonus on the WShell disc is the inclusion of the ARP, or Amigados Replacement Project. This is a shareware development that aims to replace all the CLI commands with smaller faster alternatives.

The ARP commands are highly compatible with the originals, but have been made more regular. All produce a consistent Help message, and all accept wildcards for filenames.

An additional advantage is that they can all be made resident with no problems. It does not yet cater for Workbench.

The manual provided with WShell is somewhat more terse than that of ARexx, but is written and produced with the same quality. An annoying omission is that it does not cover the programming interfaces very heavily. WShell can be extended, and ConMan can have different editing keys setups, but the manual does not cover it properly.

WShell is an excellent product. It provides some of the most powerful extensions seen in a CLI replacement, for very little memory loss. If you are interested in using the CLI, or have already been driven crazy by it, then WShell would be a rewarding investment.

REPORT CARD

ARexx
William Hawes/Amiga Centre Scotland
031-557 4242
£39

USEFULNESS
While ARexx is a good language it is only really useful if you have a program which uses its protocols.

EASE OF USE
Takes a little learning, but when mastered it eliminates mundane tasks.

INTUITION
Very much a CLI tool with only indirect access to Wimpy controls, but makes the most of multi-tasking.

SPEED
Being interpreted, ARexx is not particularly fast, but it reduces the time you spend key bashing.

VALUE
A language for £39? A bargain, it has specialist uses but meets those objectives well.

OVERALL 77%

The kind of powerful hacker's tool which sets the Amiga apart from lesser computers.

REPORT CARD

WShell
William Hawes/Amiga Centre Scotland
031-557 4242
£32

USEFULNESS
As a means of support for ARexx and ConMan it works well, otherwise a simple CLI replacement.

EASE OF USE
Command lines are not supposed to be easy to use, just rapid. Makes CLI less of a pain.

INTUITION
Economical with ram, and built to multi-task but really an expert's front end.

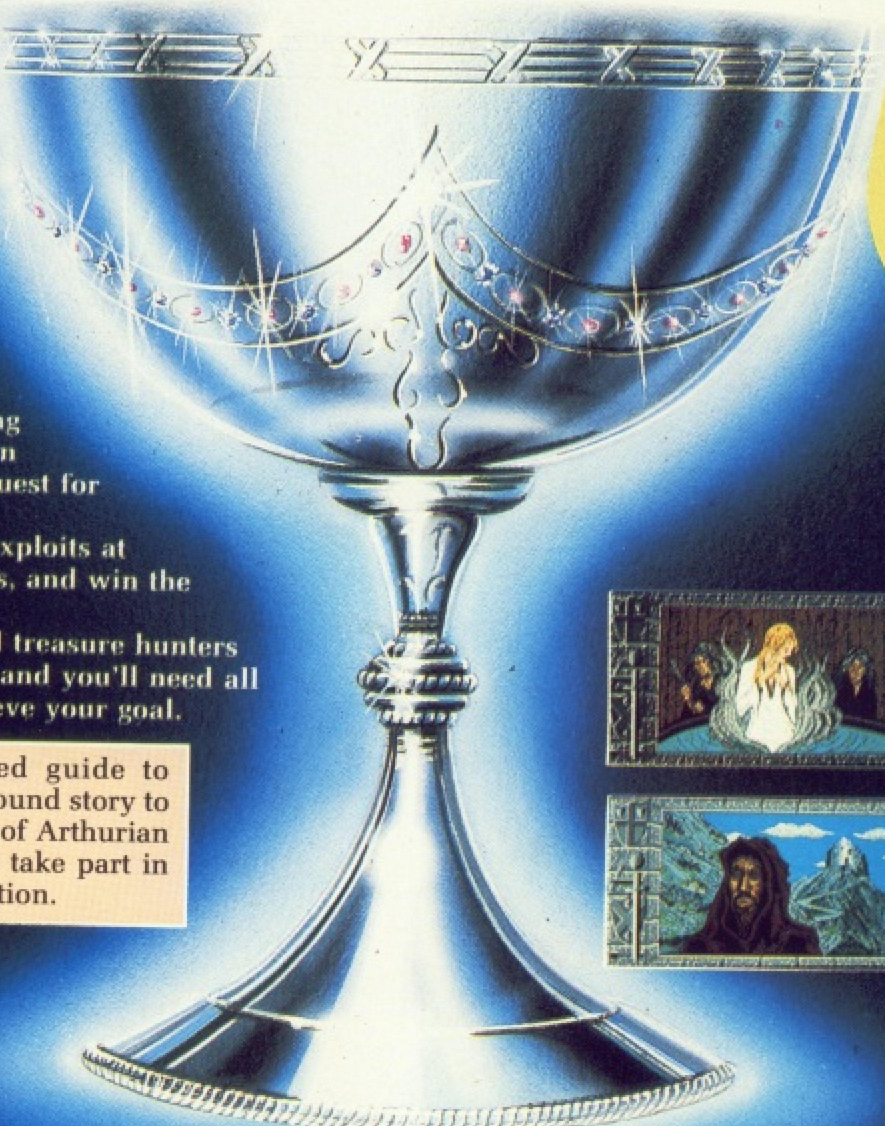
SPEED
Not a major factor, but tight assembler code means that it is quick as well as small.

VALUE
With so many PD shells around, and a free one due with WB 1.3 it needs this low price.

OVERALL 62%

Yet another shell, only ARexx makes it special – but that is enough to justify the low price.





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Screen shots from Atari ST version

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MANDARIN SOFTWARE

Level 9

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Commodore 64	●	●	£14.95
Spectrum	●		£14.95
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*Apple II		●	£14.95
Macintosh		●	£19.95
MSX 64K	●		£14.95

*These formats and all tape versions are text only.

Note: Tape versions have three cassettes in every package

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Enquiries: 0625 879940 Order Hotline: 0625 879920 **R228**

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Amiga Arcade

NEBULUS



The tower is reflected in the surface of the water using a mathematical formula

DOWN on the planet Nebulus all is not well. Someone has been building giant towers in the middle of the sea – and they didn't even apply for planning permission.

Awakening from your morning nap in the offices of Destructo Inc. you are told by your boss about your latest destruction job which involves the new Mk.7 Min-Sub and a pay rise.

The submarine surfaces at the base of each tower with an almost effective burst of sampled sound. Your task is to climb to the top of the tower – which is stewn with ledges, tunnels and lifts – within the allowed time.

Some of the ledges dissolve, while others are slippery causing you to slide comically. Flashing blocks, bouncing balls and strange creatures are intent on knocking you off your balance. You are equipped with a blaster that if fired accurately can stop or destroy some hazards.

The most amusing part is being knocked off a ledge and landing back on a lower level or in the sea. You only lose a life if you tumble into the water, so the higher you are the safer things become.

If by some minor miracle you manage to reach the top of the tower you enter the final door. A destruction sequence will be set off, the tower collapses and bonus points awarded for the time left. When a tower has been destroyed you get back in your submarine and travel underwater to the next tower. Travelling from tower to tower you can collect bonuses, catching fish by shooting air bubbles.

Nebulus was designed and programmed by John Phillips initially for the Commodore 64 and has been converted perfectly by the same man.

Although the design is very simple, some of the mechanics used to create the rotational 3D scrolling and the multi-layer parallax scrolling on the underwater game are most complex.

The rotational scrolling runs at 25 frames a second while the underwater scene is nearly twice as fast. The tower is reflected in the surface of the water using a mathematical formula.



Watch out for the aliens

AMIGA COMPUTING Excellence

The technical achievements in Nebulus are impressive, the graphics are beautifully illustrated and superbly animated. The colour scheme used is gorgeous and it seems at times that even more than 32 colours are on the screen.

The music at the start of the title page is very effective, and spot effects are some of the best I've heard on an Amiga. Not only are they well sampled, but their interaction with the game have also been well engineered.

I can't recommend this one highly enough, it's one of the most refreshing and enjoyable games I've had the pleasure of playing this year.

If you only buy one game this month make sure that it's Nebulus and you won't be disappointed.

Chris Holmes

Nebulus
£19.95
Hewson

Sound
Graphics
Gameplay
Value

Overall – 84%

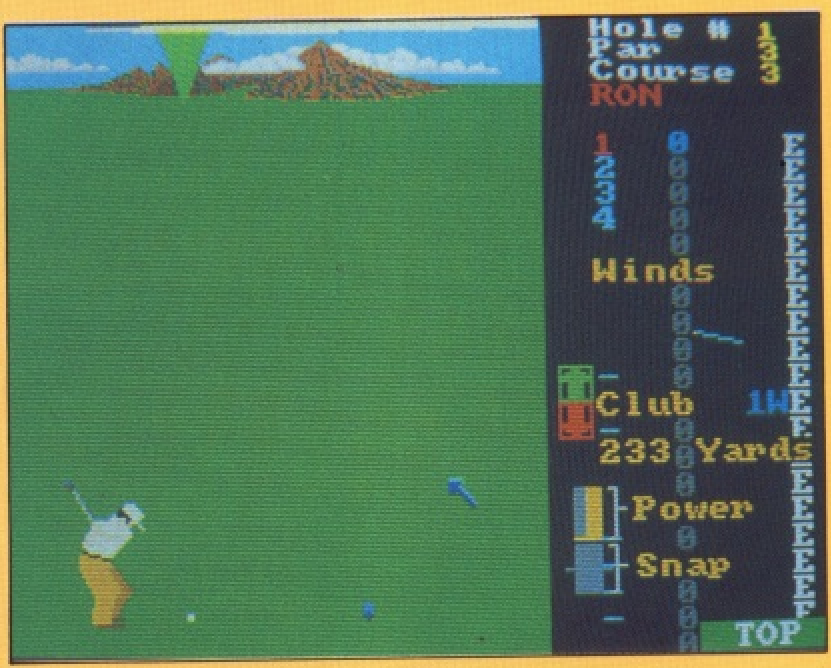
BIRDIE

EVERY once in a while a game arrives which blows the competition clean out of the water. Leaderboard Golf was one of these, and when it first arrived on the C64 it marked the beginning of a new era in computer sports simulation. Not least because it made computer golf a playable game.

Before very long the much anticipated sequel arrived in the form of Leaderboard Tournament. Using exactly the same formula as the original the new game added features like the driving range, hole skipping and tougher courses.

The Amiga versions of both games promised, once again, to be standard setters and so they are – with a few extra features to boot. But since they've been around for a while, US Gold has revamped the re-release with a two disc pack for the price of one. Considering the bundle includes a score card, maps and stand-up club power guide, it represents very good value for money.

The game is played entirely in 3D, viewed from behind the golfer. At the start of each shot you select a club from three woods, nine irons or a pitching wedge. The distance to the hole is displayed to aid your decision, even though the flag may be hidden by trees, across a lake or whatever.



Fore!

Next, using the mouse a small crosshair is positioned to set the direction of the shot.

Now comes the tricky bit. Pressing the right mouse button starts the backswing and the power meter starts to climb. Releasing the button sets the power and starts the downswing phase.

After the downswing comes the snap indicator. Correct timing here is essential to ensure the ball is hooked or sliced the way you want.

On the beginner level, the snap feature is disabled as are the winds – yes, it includes every golfer's nightmare – making things a lot simpler until you get used to it. Some other obstacles are always present, of course. The trees for example – a ball on the rough is worth two in a tree. And last but not least the bunkers and lakes – just as tough as real life, I assure you.

When you make it to the green the club selection changes to a putter automatically. Now you have to judge the shot power and angle given the lay of the green and the distance to the hole.

Even if you already have one of the originals, Birdie is well worth the outlay. If not, get it anyway.

Mark Smiddy

Birdie
US Gold
£24.95

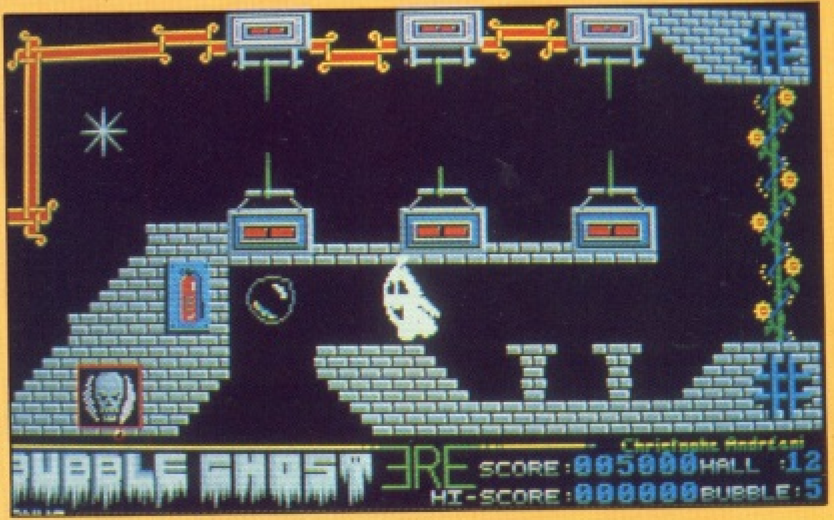
Sound
Graphics
Gameplay
Value

Overall – 80%

BUBBLE GHOST

CUTE is the right word to describe this rather simple but fun game. There are 40 screens to conquer and the objective on every one is exactly the same – to push a floating, iridescent bubble from one side of a room to the other without bursting the fragile sphere in the process.

The bubble-pusher is a small, appropriately dead-white ghost which is guided around the screen by moving your mouse in the desired direction. Pressing the left or right hand mouse button causes the phantom to rotate in a clockwise or anti-clockwise direction Asteroids style.



Don't let it spook you!

The only means the ghost has of getting the bubble to move is by huffing at it – a press of the shift or space key causes the spook to puff out its cheeks and exhale. Providing the spook is close enough, the bubble will float away for a short distance, propelled by the ghostly breath.

As you know, ghosts can pass through solid matter and in this case such matter includes the bubble. However, although the ghost is immune from coming to grief on any objects, the bubble is not. Should it touch any solid item, the bubble will pop with a satisfying "Flink".

When this happens the little spook turns to face you, scowls and lets rip with a short burst of angry gibberish. The game is over when you've burst five bubbles – although extra bubbles, can be earned by taking a trickier route.

Each screen represents a room. The bubble is usually positioned on one side of the room with at least one exit at another – another includes the ceiling and floor.

Every room is different and in addition to an increasingly more difficult maze-like configuration of walls and passageways, also features a variety of obstacles such as lit candles, electric fans, spikes, retracting needles, and assorted pointy objects.

To add to the fun, a timer ticks away – the quicker you get the bubble to the exit, the higher the bonus. Failure to make it to the exit before your time runs out only results in your failing to score any bonus, not the loss of a life.

There are some neat points to the game. The ghost turns bright red and chokes if he puffs away for too long in one go – this temporary seizure is accompanied by the sampled sound of a cough and wheeze.

The ghost can blow other light objects besides the bubble. And trying to manouevre the bubble past a moving fan which blows it every which way is a real test of your patience and dexterity.

The title music is pretty good – unfortunately, it is only heard once, immediately after the initial loading – but other sound effects are few and far between.

The graphics are fairly modest and uninspired and animation quite limited, although the ghost is nicely realised – cute and cuddly, if you like that sort of thing.

Although Bubble Ghost is quite novel and is enjoyable, harmless and ever-so mildy addictive, the fun and challenge per pound sterling does not represent a good long-term investment. Nice, but at this price not that nice.

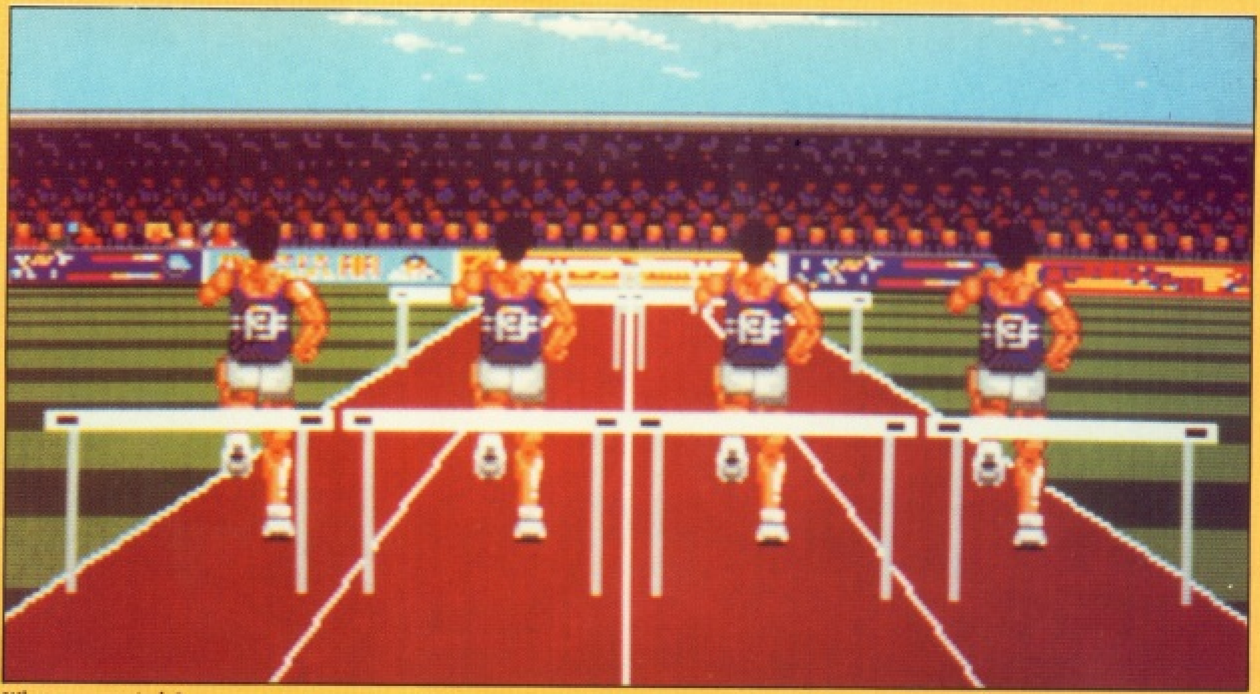
Bob Chappell

Bubble Ghost
£24.95
Infogrames

Sound
Graphics
Gameplay
Value

Overall – 60%

SUMMER OLYMPIAD


What – no steriods?

THE Seoul Olympics have been and gone, but despite that Tynesoft is cashing in with another of its sporting simulations. However like many companies, Tynesoft has been criticised of late for converting ST games directly to the Amiga. After all, the two machines share many similarities – with the ST coming second every time. So has Tynesoft's team breathed life into the Amiga version?

This new offering is supplied on a single disc containing a staggering 1.2Mb of programs and data, which seems good value for money. There are five events – skeet shooting, diving, fencing, 100M hurdles, and triple jump. The opening ceremony is featured, but surely couldn't be called an event.

As the game boots, the screen opens out requesting the names of the competitors – up to six people can play at once. While selecting your home nation, its flag is displayed waving in the breeze. This doesn't add anything to the game, but it gives the feel of a professional and well designed product – a taste of what is about to be unveiled.

The first event is skeet shooting. In essence, this is a variation on the old duck shoot theme, although there's the option at the start to use a joystick or mouse – it's easier with the mouse. Pressing the fire button selects which is required automatically.

Your marksman stands a full half height in the screen and as you move the targetting circle his whole body moves aiming the gun – no surprises here.

However, as the circle reaches the left or right hand edge, the screen scrolls sideways – beautifully smoothly. Clouds and other scenery add to the effect.

Press the left button to pull, and a skeet whistles across the screen from one of the catapults, subtending a beautiful arc through the air. Initially, I was so surprised by the graphics, I completely missed the point of what I was up to.

There are seven stations in all with a mixture of singles and doubles. For each skeet launched you get one shot, and two can be in the air at once – although some seem to move rather too slowly.

Next up comes the diving, and memories of poor Greg Louganis bashing his head on the springboard come flooding back. Diving in Olympiad is from the 10 metre board.

Control is by joystick only with four directions used to pike, tuck, roll and straighten up for a good entry. Marks are determined by the number of rolls, pikes and twists you complete and the quality of your entry – sorry folks, belly flops won't do.

When the time came for the triple jump I thought it was my birthday. No problem this. Rattle the joystick like there's no tomorrow, press fire at the right time – and hop-skip-leap into the sand.

Needless to say I forgot about the angle control. And while getting the perfect 45 degrees on take off isn't too hard, you've got to keep it near there for the whole sequence or else you won't make the sandpit.

I've always fancied a quick riposte. So, now was my chance as the curtain raised on Tynesoft's interpretation of fencing.

Launching in with typical Forester charm, I was soon foiled neatly by my computerised opponent. The only way to beat the sucker is with cunning, but you have to go three rounds to qualify and the computer gets better with each.

At long last came the joystick-bashing finale to the Summer Olympiad. Deservingly, it's graphically the best. Let's face it, the 110 metres hurdles doesn't sound very thrilling – until you place the view behind the competitors.

Couple this to a nice 3D sequence where the camera drifts into position behind the player and you have an amazing event. As usual, speed is controlled by frantic joystick wiggling, the fire button being used to jump.

Once again Tynesoft has produced a winner, albeit an expensive medalist. Both the still and moving graphics are very good, the gameplay addictive.

The sound is lacking in places, but the title music makes up for it – play this on your hi-fi and boogie on down. On your marks, get set, go – down to the shop and experience Seoul for yourself.

Julia Forester

Summer Olympiad
£24.95
Tynesoft

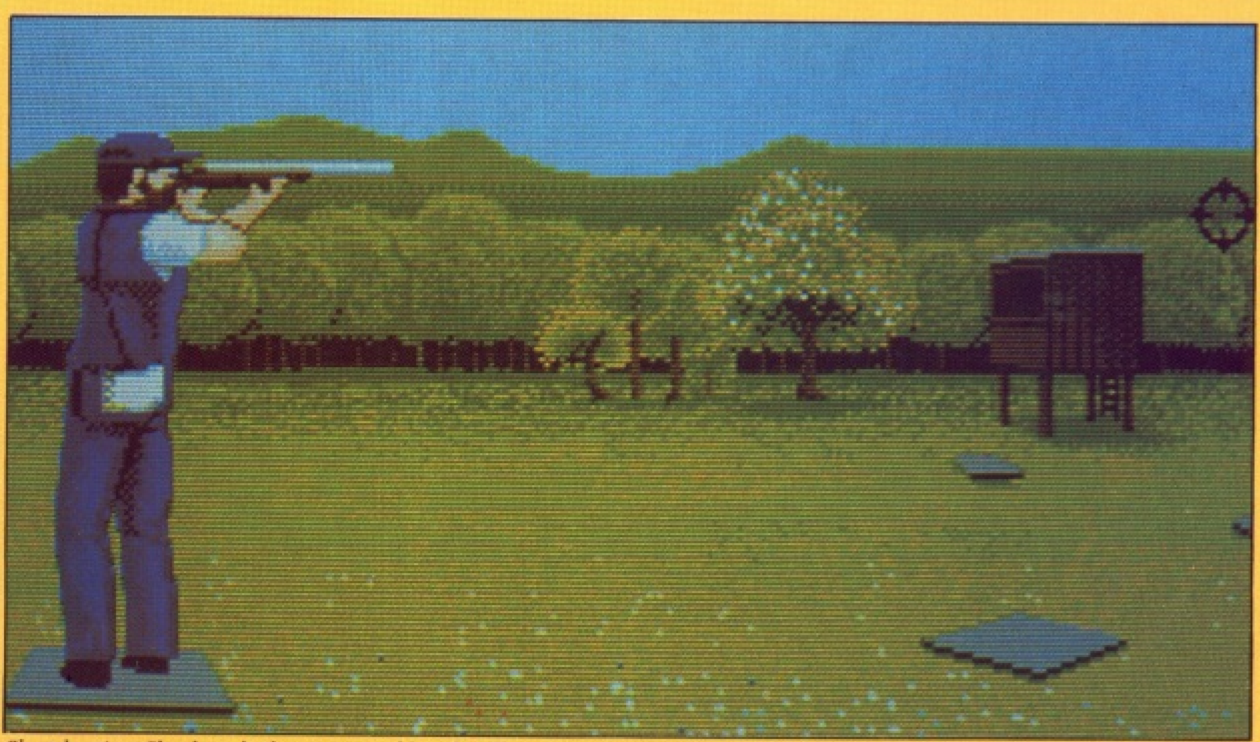
Sound

Graphics

Gameplay

Value

Overall – 62%


Skeetshooting: Clouds and other scenery add to the effect

BOMB JACK

COIN-OP conversions are still being churned out and here's another. Bomb Jack is looking a little long in the tooth now, having been around for the 8 bit machines for some time, and its age clearly shows.

This conversion, while competent and fun to play, does nothing to make use of the Amiga's potential, yet costs a whole lot more than those for far less powerful machines.

The game consists of six differently backdropped screens whose prime constituents are platforms, bombs and aliens. The bright-red, fused bombs are liberally strewn and must be defused before progress can be made to the next screen.

Bomb Jack, the hero of the game, is a diminutive caped crusader, not a little unlike the Mighty Mouse of cartoon fame. His task is to fly around and make contact with each bomb, thereby defusing it.

The platforms are there both to help and hinder him in his duties. The aliens flit around trying to make contact with Bomb Jack – one touch and he loses one of his three lives.

Each of the six backdrops, which are quite attractive even if they do serve little purpose other than ornamentation, represents a country. For instance, there's the pyramids and Sphinx in one, the Acropolis in another and what I take to be a French chateau in yet another. Once you've completed the six screens, they recycle with a new platform layout.

Bomb Jack tends to float rather than fly – when he's on solid ground, the fire button launches him upwards. He continues to float skywards until he runs out of steam (or bumps his head on a platform) and he descends slowly earthwards. While he is floating he can be guided to the left and right.

When Bomb Jack touches an alien, he does nothing more exciting than spin a couple of times to show that he has lost a life.

Animation of the aliens is similarly basic. These beings, some of which look more like unbaked gingerbread men than creatures from outer space, move gently about the screen trying to hamper Bomb Jack's mission.

After the loss of a life, Bomb Jack is replaced on the starting position of that screen but, thankfully, any bombs already defused do not reappear.

Other objects pop up from time to time and must be touched for bonus points, and extra lives. The game can be played by one or two players with one or two joysticks.

There is also an option to turn off the music. I suggest you use it.

On the plus side, Bomb Jack is simple to play, slightly addictive and the backdrops are pleasing to look at. On the minus side, the game lacks depth and variety and is far too expensive for the limited entertainment it offers.

If it were less than a tenner then I'd say go get it – but at its current price, Bomb Jack is definitely not good value for money.

Bob Chappell

Bomb Jack
£24.95
Elite

Sound
Graphics
Gameplay
Value

Overall – 47%



Pretty graphics fail to hide poor animation

NETHERWORLD

NETHERWORLD is Hewson's first dip into the Amiga market having been programmed by Imagitec, designed and developed by the Finnish programmer Jukka Tapanimaka.

The game is set in a world of fantastic structures and wonderful beings. You are trapped in this mystic place, and the only way back to reality is to collect enough of the local currency to pay your way out, otherwise you'll spend the rest of your days dodging acid bubbles and dragons.



A weird game of teleports and diamonds

The aim of the game is to collect a set number of diamonds within a time limit and then exit through a teleport. After each level there is an intermission, and an extra life is awarded if this is successfully completed.

The playing area consists of features which can assist or hinder your quest. For example a brick smasher will shatter a wall and allow you access to the diamonds.

Teleports can whizz you to random locations within the playing area in times of emergency, and demon killers allow you to destroy deadly foes simply by touch.

Extra lives and invulnerability can be picked up as surprise bonuses, but these are not advisable as they could also result in an uncontrollable ship or reversed controls.

I am a little lost in summing up just how good or bad this game is. The graphics are consistent throughout and the multi directional scrolling is very smooth. The sound effects are run of the mill but the music which accompanies the title page is very good.

Netherworld is a well designed and executed game on 8 bit computers but on the Amiga it doesn't quite make the grade. True, it has some nice features and original touches like alien generators, but at the end of the day it's poor VFM.

At the same price you could go out and buy Hewson's other new release for the Amiga, Nebulus, which is a far more entertaining investment.

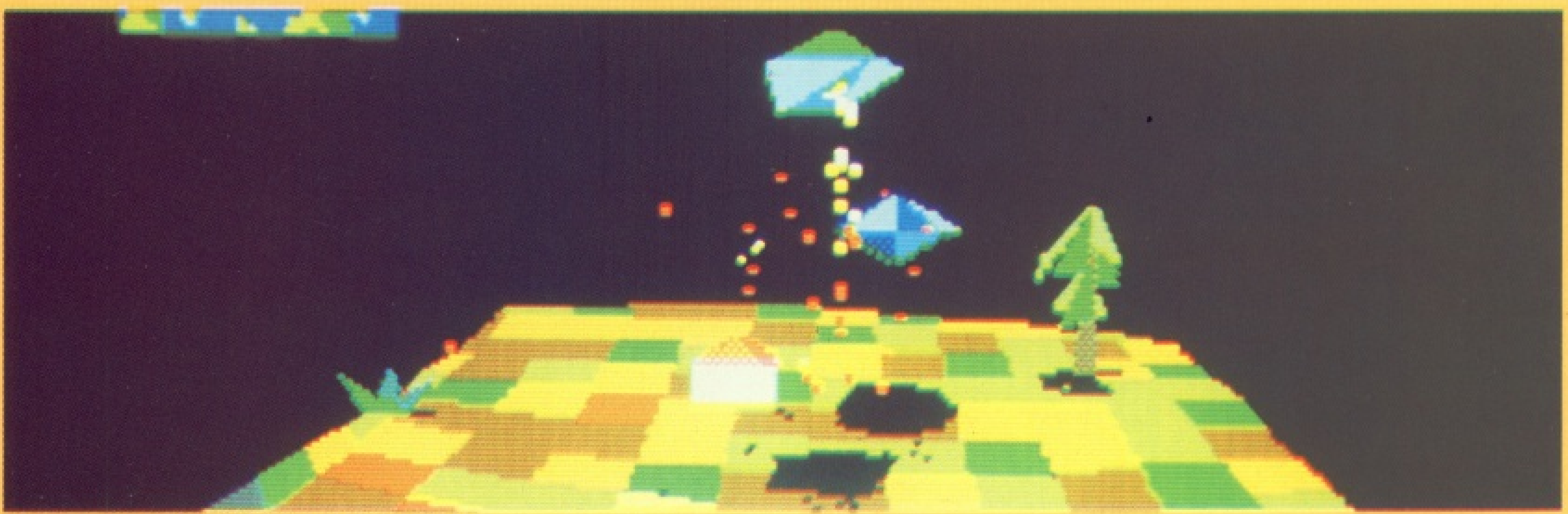
Gary Wilson

Netherworld
£19.95
Hewson

Sound
Graphics
Gameplay
Value

Overall – 52%

VIRUS



Most of the game is learning to control the hover plane

VIRUS is a game with a history. It started life on the Archimedes, for which Acorn wanted a really good demo. They contacted David "Elite" Braben, well-known miracle worker for brain-damaged micros, who some time later came up with Zarch.

For reasons still not likely to convince anyone of Telecomsoft's sanity, the game lost some features – Firebird deemed the smart bombs silly, and gained some new aliens along with the name Virus during its trip to the Amiga. But here it is, nonetheless.

Virus is a shoot-em-up. Compared to others of the ilk it's like selling an ST to someone who's seen an Amiga – fiendishly difficult – but apparently it can be done.

Your Hoverplane flies over a patchwork landscape. It is not alone; a range of aliens has also taken a liking to the area and they are determined to turn it red. They do this by seeding the old green and pleasant with viruses, whereupon the crops fail, the people starve and you – yes, you – get to go out there and marmalise the critters.

The most difficult thing about Virus is controlling the hoverplane. It flies straight upwards when the mouse is dead on the spot it was on when the plane was launched. If the mouse is moved away from that spot the plane tilts in that direction.

Firing the rocket under the plane will start it moving thuswards, but as the mouse is moved farther away from the central point the plane tilts more and more until it is upside-down. The rocket motor now points upwards, and will propel the plane into that glorious quilt of a countryside at a speed which seems impressive the first five or ten times you see it.

By the thirtieth time you've examined the interesting geology of ten feet under, you will have found that the mouse is so sensitive it bursts into tears during Blind Date.

It is a moment of considerable triumph when the plane is steered towards that blip on the radar and gets close enough to hear the chilling whine, let alone close enough to see the circus tent decor of the alien seeder. Now all that needs to happen is to hit the blighter – just dip the nose a little to aim and... oh well, you always wanted to be a landscape gardener.

Eventually it does prove possible to steer the plane well enough to hit the seeders with the laser gun. The best strategy, to spiral downwards and spray away like an incontinent hippo on a helterskelter, pales when you notice that every blob fired results in a point taken away from your score. Negative scores are not uncommon in the early days.

Amiga Computing Excellence

You have three short-range guided missiles, which if fired from too low an altitude, are also liable to take up gardening. However, it is possible to rise to the flight ceiling and let off the missiles with a fair chance of hitting all three seeders on the first screen.

This leaves you nothing but your wits and the laser to cope with the bombers, drones, mutants, pests and fighters which infest the later screens. You get an extra life and missile every 5000 points, it says in the notes. I believe these, as so far their description of all those deviants has proved devastatingly accurate. There are so many ways to die...

If this sounds too, too nasty, then rest assured that the graphics are wonderful – the first shoot-'em-up that really works in a three-dimensional landscape – the sound just right, even down to the little plips and ploshes when you manage to get as far as the ocean before crashing, and the animation of smoke, particles and almost everything else scrumptious. The sense of achievement when you hit something is almost incidental.

You haven't lived 'till you've died in Virus.

Virus
£19.95
Firebird

Sound	9/11
Graphics	9/11
Gameplay	10/11
Value	10/11

Overall – 87%



You haven't lived 'till you've died in in Virus

QUADRALIEN

LOGOTRON was reknowned for little in the gaming field except for Xor, a strategic 2D maze game. Suddenly, after the excellent Star Ray, the company has hit the Amiga scene with a bang. The next release is Quadralien, a sci-fi puzzle game with shooting, back in the Xor tradition.

As well as a reactor heading for meltdown the luckless player has to contend with an invasion of aliens, a rogue computer, and a whole host of fiendish puzzles. The reactor, known as Astra, has three levels comprised of six chambers and the reactor core.

The complex part of this game comes in the form of slave droids which either repel or attract, just like magnets, and supposedly control the plant's day-to-day maintainance. The whole thing is rather confusingly refered to as the Dynamic Magnetics System of Entropy Control, or DyMSEC.

The primary aim is to avoid a meltdown by preventing the core temperature from getting too high, or the operations energy from sinking too low. Plus finding and destroying the Quadralien Mother.

To reduce the plant's temperature you must maneouvre one of your droids so that it sends water barrels down chutes, or reduce the entropy level which is a measuure of the movement of the DyMSEC. Tortuous or what? You control two from an initial selection of six droids as they run around the various mazes, shooting obstructing objects and absorbing others.



Choose your 'droid carefully

Each droid has its own special characteristics, from using a headlight to illuminate a darkened chamber to brute strength when shoving objects out of the way. The correct choice of droid depends on which environment you are confronted with.

What makes the game interesting, or stupifyingly dull depending on your point of view, is the way the various objects on screen interact with each other. So in order to create a certain effect or reach a certain place it is first necessary to work out where everything is going to end up.

There are loads of differents types of objects, plenty of options for making the game more playable, such as code words to bypass the lower levels once completed, and a number of ways in which it can be tackled.

David Whittaker's music is pleasant enough, but the crude flip screen scrolling is irritating, and although the graphics are serviceable, Quadralien isn't pushing frontiers back in any department. I found it all a little tiresome .

Mark Luckham

Quadralien
Logotron
£19.95

Sound
Graphics
Gameplay
Value

Overall – 56%

WHIRLIGIG

ONCE upon a time, before the fateful day when Clive Sinclair got his first tricycle, computers were rare. Huge metal cabinets filled with valves and filling large areas of university labs, they were designed and used by mathematicians.

It was confidently predicted that there would only ever be six computers in Britain because it would be impossible to train enough mathematicians to operate more. The mathematicians got quite excited by this, sensing a chance for a real job at last.

But sanity prevailed. Nowadays, any intrusion of mathematics into computing is viewed, quite rightly, with suspicion. On odd occasions a pure mathematician does chance across a computer; a progeny of just such a strange match is Whirligig.

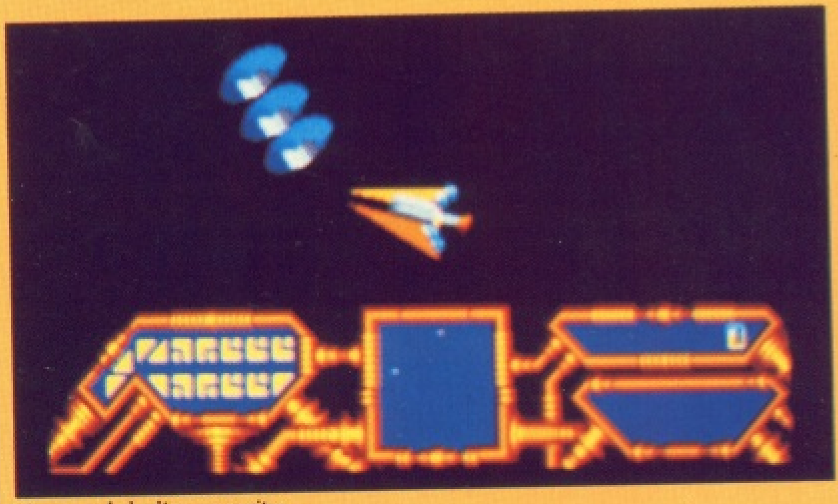
Take the game screen. In the middle sits a comfortably familiar, if a little angular, 3D shaded spacecraft. Shame about the colours, but you can't have everything. But the area around the craft isn't yer ordinary hard interplanetary vacuum in which a thousand heroes have died, my goodness no. It's eigenspace. Come eigen?

Eigen is numberwallah jargon for – among other things – solution. An eigensomething is a something which matches the conditions, so an eigenbus for East Ham is the number 15

An eigenspace has a number (from one to four billion), and a combination of stargates (links to other eigenspaces), missile, chaff and fuel depots and even the occasional perfect solid. Missiles and fuel are standard space game issue – except that if you fire a missile and there's no target they loop around and hit you – and chaff is an electronic fog that can confuse attacking ships.

You'll find a fuel store in an eigenspace which can be divided by 2 after you take 1 from it (so 5-1=4, which divides by 2, so in 5 you'll find fuel), likewise missiles in sectors that can be divided by 3 after taking away 1, and chaff in sectors that do the same by 5. Perfect solids – of which there are just five – have to be collected; get the set and return to Earth's Golden Age. That's 1988, according to the book; a sobering thought.

All this wonderful numbercrunching means that, if you have a doctorate in integer mathematics, you can plot a course around the network of eigenspaces. If you don't, you're reduced to playing the game, and talking of coarse plots...


Computed shading on sprites

The only fun about is shooting at the ships which guard the solids. As some of these are invincible, you might have to run away.

This game is for retired professors who find spreadsheets just a little too exciting for the old ticker. Mediocre graphics – sprites dressed up as 3D solids with a light source – poor mouse control and frustrating screen changes, combined with hyperactive marching music, might put the rest of us off. Spend your twenty quid on Russell & Whitehead's Principia, it's much livelier.

Rupert Goodwins

Whirligig
Firebird
£19.95

Sound
Graphics
Gameplay
Value

Overall – 20%

There's magic in Cornwall

FIRST off, Giles Lovegrove from Cornwall offers some help with Faery Tale. He advises that the jade skull kills all your enemies on the screen, Crystal orbs allow you to see hidden doors, green jewels enable you to see at night, magic rings freeze your enemies and blue stones teleport you when you are in a rings of stones.

In houses where there is a fire there will also be an object. Press look and it will appear. All the forts which lead up from the village need a green key. The only one you need is the first fort on the left and you can get into that without the green key by walking along the left wall and going through it halfway up.

Straight down from the village is the city of Marheim. Don't bother going into the palace, because the king tells you he can't help and you cannot draw your weapon. If you cross the river behind the village and follow the coast up you will eventually come to a raft which is helpful.

JONATHAN Good has some hints for BMX Simulator. He says that on level two the best line is to come out of the first turn and come off into the rough. Staying on level two, if you are riding along the straight and the fence is on your opponent's left you can go through the fence and then through a gap to the finish. Sneaky huh?

On level three you should go round the hill up the side and through the flag when you cannot go over the hill, but watch out for the cone. Having made it to level four, the bikers should take the inside line and overtake the computer at the tyres near the finishing line. It is best to go over the starting line, missing out the top left-hand corner.

But Jonathan is not just good at pedalling, he has some airborne hints. First for Skyfox, where he suggests that you kill all the planes first, then the installations, refuel and finally knock out the tanks.

His hints for Mercenary are pretty good. Fly the Dominion dart to 350 metres, level off to a speed of 1,781 kph and fire a missile. Pick up the



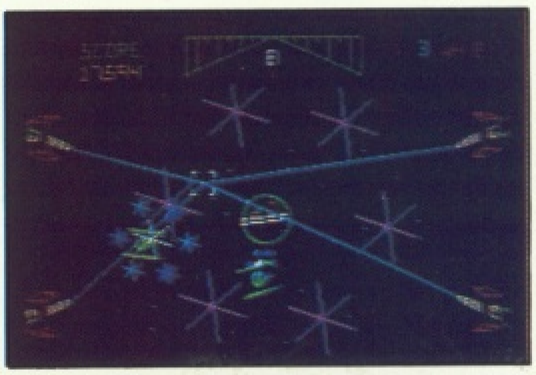
missile when you get close enough and then land. Go to 0808 and take the crashed intergalactic craft to 0806. Leave the ship and go through the triangular door. This leads to the author's cheat room, where you will find keys to all the doors, the ability to carry lots of items and get out of jail free cards

Amiga Computing itself is truly international. The last tip has winged its way from Victoria in Australia. No not someone called Victoria, it's actually from Keith Fung. He's a Star Wars space ace and offers these tips:

In space fire only at the fighters in the middle third of the screen. This means you can shoot all the fireballs before they hit you. Concentrate your fire against Darth Vader's ship, although you cannot destroy it, you get twice as many points. Closely spaced hits do not allow him to take evasive action.

Use the time while Darth is stunned to take out fighter escorts. Try to find the Darth Vader ship when the level draws to a close and get as many shots as possible in while he flees.

As you fly over the surface of the Death Star memorise the patterns of the towers as they rise. Shoot slightly above the tower, allowing it to move into your fire. Work methodically



from left to right, taking the towers in turn. It's quicker than random blasting.

Do not try to follow a tower to the top of the screen. Wait for it to reappear later. Be sure to shoot fireballs. It is more important to defend your shields than to destroy all the towers.

In the trench you can use the Force. This means not shooting anything until the exhaust port appears. Fine for the first few times around, but things get tougher and you have to rely on your weapon. Do not bother trying to shoot the fireballs which are not going to hit you, they are not worth risking shields for.

Since you are safe if you touch the floor or sides of the trench, use this to dodge the enemy fire. The fireballs move comparatively slowly towards your current position so do not fly in line with a gap until the last minute, this will lead the fireballs astray.

Try and keep low, as this is the best position for weaving *(whereas you are best off keeping high in the arcade – ed)*. Perhaps the best tip Keith offers is to turn the mouse mat vertically to remind you to keep within the middle third and to help you dive and climb more quickly.

Max "The Hacks" Tennant is the master of game play. Whatever the game he'll win at it, fair means or foul – often with a little help from his friends. If you have a tip for a game send it in. For every one we print we'll send you a game from the collection in our goodie drawer and a fabulous Konix Speedking, as used by all serious joystick jockies

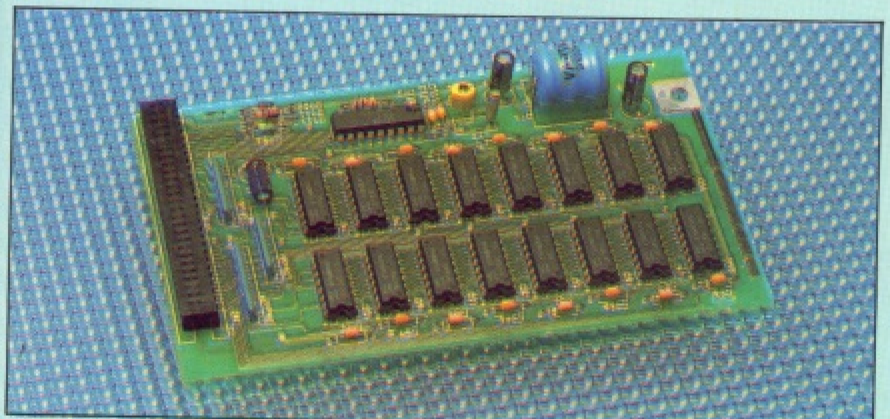
DATEL ELECTRONICS

❏ EXTERNAL 3.5″ DISK DRIVE

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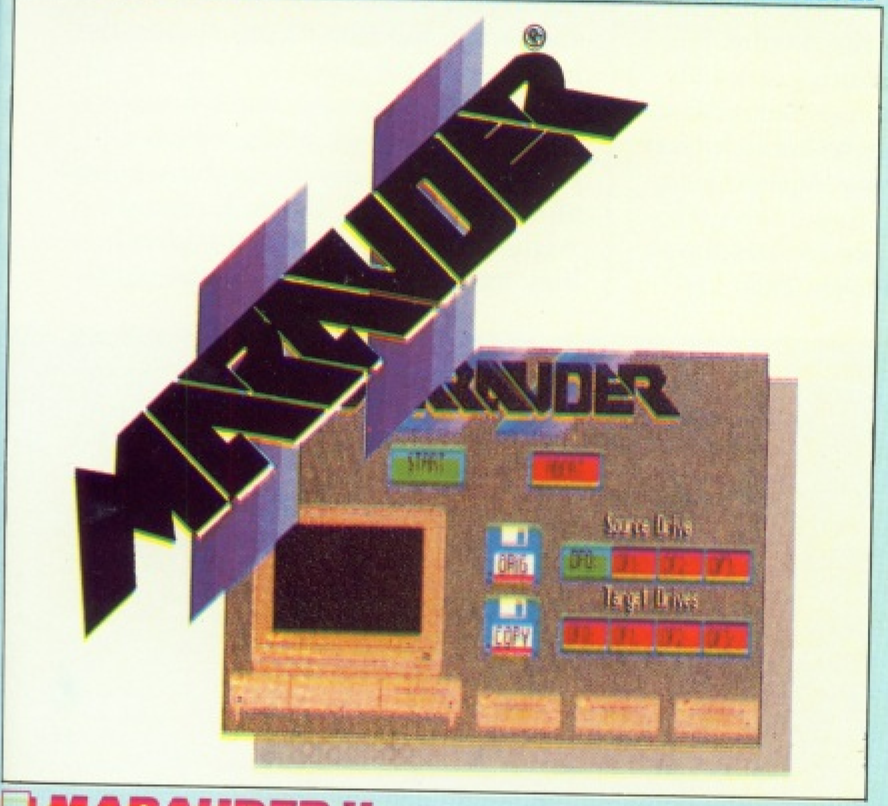




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Into the silicon underworld

Rupert Goodwins takes a final look at the chips which make the Amiga go kerpow in the night

THE denizens of the Amiga's underworld have a wide variety of jobs. Paula sings, Denise paints, and Fat Agnus drives a bus. And juggles. Fat Agnus is the second cleverest chip in the Amiga, after the 68000 processor, and together with its (her? One never knows) sidekick Gary controls most of the rest of the circuitry.

The diagram on page A-11 of the Amiga 500 manual makes Fat's (perhaps not) central role pretty clear. At the bottom is that valuable resource, the computer's ram. Connected to it are old pals Denise and Paula, the 68000, and slap in the middle is Fat Agnus.

All of the chips are hooked up to the ram's data bus, along which all the information about graphics, sound and programming flows. But only Agnus is connected to the address bus, which tells the ram chips which



chunk of information to make available when.

Before delving into the ways in which Agnus exerts total control, it's worth taking a closer look at the address bus. The Amiga can comfortably handle one megabyte of memory. One megabyte – 1,048,576 separate locations – is 1 followed by 20 zeros in binary, which means that the address bus needed to get at all the memory is 20 bits wide. But Agnus' link to the ram chips is only nine bits wide. Some mistake?

The ram chips used by the Amiga (and all other small computers these days) are Drams – dynamic random access memory. Like most other chips, they're made out of small slivers of silicon. Silicon is a semiconductor – in some circumstances it conducts electricity, in others it doesn't.

In Dram chips, most of the on-chip area is dedicated to banks of capacitors which store charge. That's how memory remembers – a capacitor is either charged up or discharged depending on whether it has a digital one or zero. Each bit of memory has its own capacitor which is charged up (or not) when the computer writes a one (or a zero) to the memory location. Next time the computer reads that bit of memory, the memory chip checks the state of the charge on the capacitor and reports a one if it's charged, a zero if not.

Unfortunately, cramming 256 thousand capacitors into an area the size of a ram chip means that each capacitor is very small. Small capacitors can't hold much charge, and they also have the embarrassing habit of leaking.

A CAPACITOR is two conductors separated by a non-conductor, and on a chip that's two areas of conductive silicon sandwiching a non-conducting region. And non-conducting silicon isn't as good an insulator as a full-timer like rubber or plastic, so what little charge the tiny capacitors can hold vanishes in a few hundredths of a second.

To overcome this forgetfulness, any circuit which uses Drams needs to refresh them. This amazingly technical term – perhaps the designers of the first Drams couldn't quite face up to the embarrassment of having a REMIND signal – means that the computer needs to read each bit of memory at least once every so many milliseconds. Reading the bit is enough – the rest of the ram circuitry can then top up the capacitors if needed.

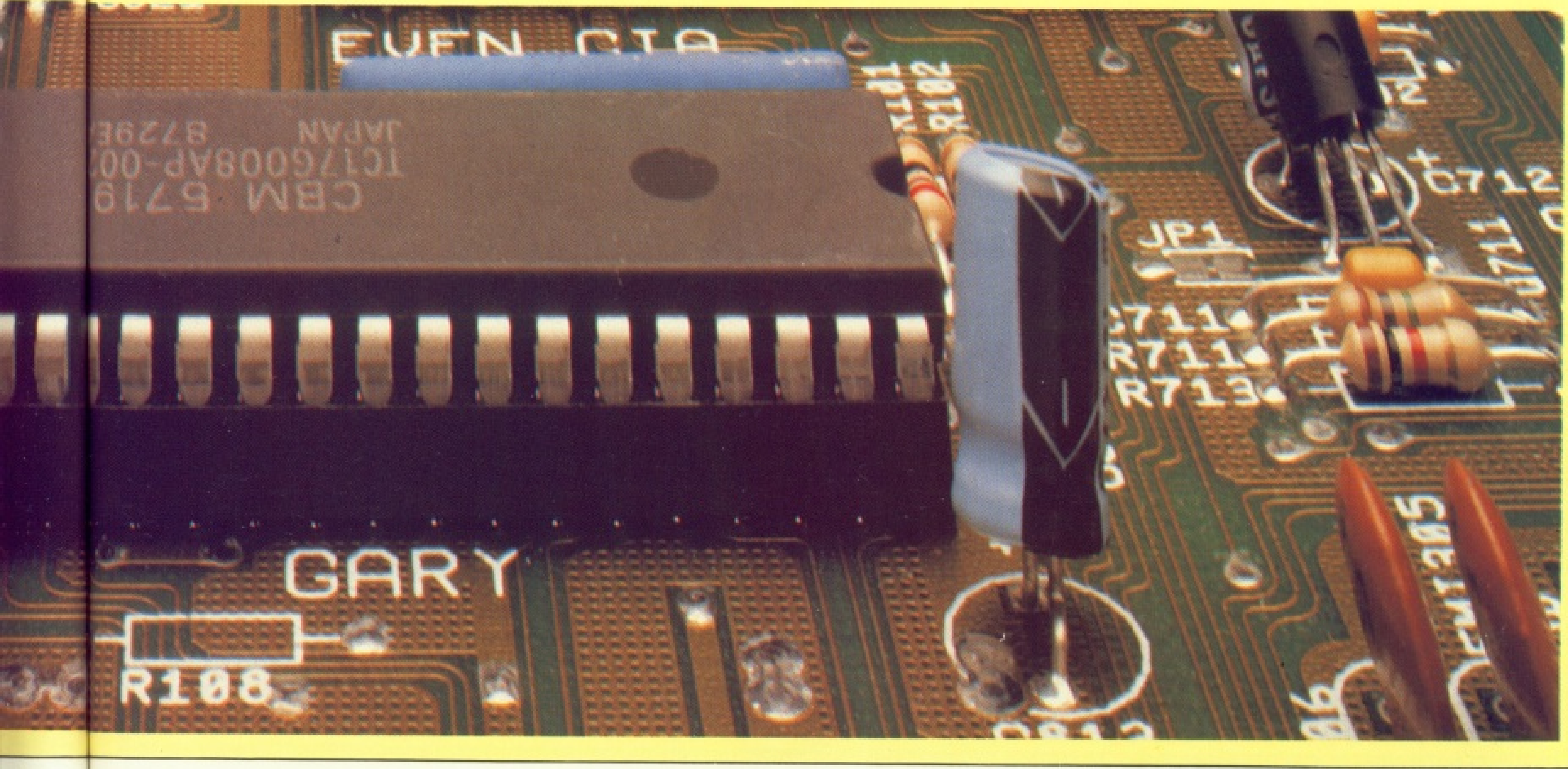
This has to happen regularly, otherwise programs and data can become corrupted, and it needs to happen independently of any other memory operation that might be going on. Stand up Agnus, and go get the refreshments.

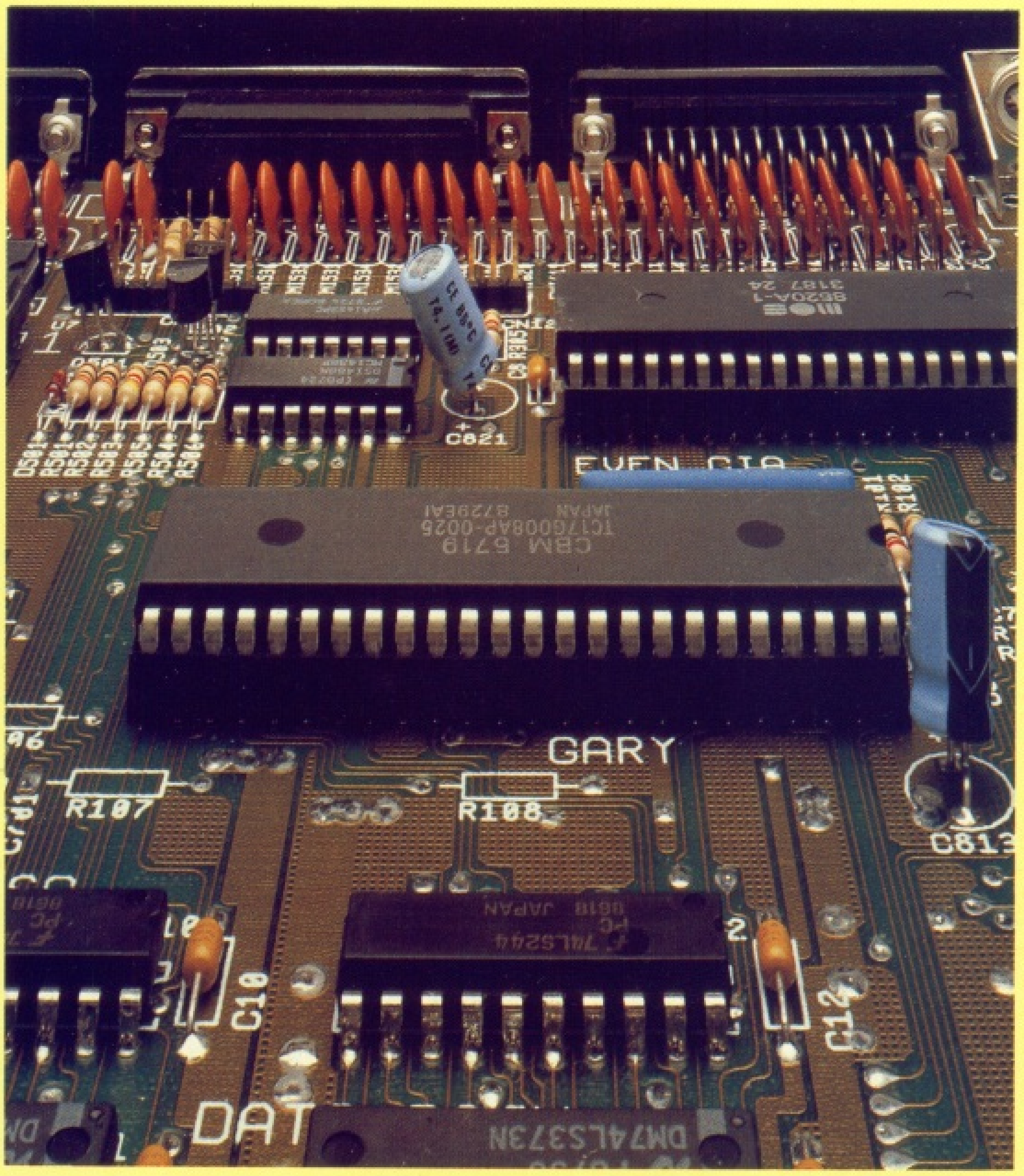
The mystery of the nine address lines is solved by a Sherlockian inspection of the internal structure of the Dram chips. The memory elements are arranged in a grid with separate row and column lines, an arrangement which not only make sense electronically but also makes it easier to get at sections of memory when needed for refresh purposes.

An individual bit is accessed by setting up first row and then column addresses; in the memory chips used in the Amiga there are 512 rows and 512 columns giving a total of 256 thousand separate locations – a 256k chip. 512 is nine bits of binary, which happily coincides with the width of the address bus between Fat Agnus and the memory circuitry.

There are also some other signals – RAS and CAS, standing for Row Address Select and Column Address Select, which tell the chips what to do with those nine bits. To complicate matters, there are two RASs and two CASs; the two CASs go to two banks of chips to speed things up. Ram chips can only shovel the information in or out at a certain speed, because it takes time for signals to travel within the chip and the transistors that route the signals to switch.

With two separate CASs, one bank of chips can be partially set up while another is busy producing or accepting data, thus eliminating at least part of the delay between reading bytes. The separate RAS goes ►





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to the extension ram, and together with other signal switching within Agnus and Gary lets the 68000 read and write the extension ram while Agnus does video things with the lower 512k. Sounds fast, and it is.

It's a compromise though, as on an unexpanded Amiga with only the one block of 512k the video and the processor fight it out for dominance, and the video has the chips in its favour. So the 68000 spends a reasonable amount of time doing nothing but waiting for Denise to finish displaying.

This can be avoided only if the video and the processor have two separate busses, which needs more and bigger chips. This is expensive. Hence the compromise – do you want a computer that's fast, or one that's cheap? You want both?

All this gets trickier, because even the compromising has to happen very fast. If the 68000 decides it wants to read a word from address 563, Agnus (in concert with Gazza) has to decide whether something else is likelv to want to get at the memory first, and if so who has priority.

If Paula is going to need to read the memory at the same time to get some sound data, then the Agnus/Gary team prevent the processor from making a conflicting memory request by stopping a signal that says Data ready (DTACK – Data Acknowledge) to the 68000.

The processor just thinks that the memory is slow today, little imagining that some extra read commands are being processed under its nose. Perhaps Agnus isn't the second cleverest chip after all...

DECIDING priorities is one of the trickiest parts of Agnus' job. After all, the other chips covered so far rely on Agnus to provide the right amount of data at the right time. Looking at the top right-hand corner of the block diagram of Agnus on page A-17, there is a box marked BUFFER/MUX.

MUX is short for Multiplexer, a device for combining two sets of signals on to one set of wires. Television has a crude MUX – if you're watching BBC you can tell from the title music whether you're watching the news or East Enders. The same channel carries both information and entertainment, and even East Enders, but special signals let the recipient (you) tell the difference.

The MUXs in Agnus combine (at the top right hand corner) signals to the internal workings of the chip itself and the control registers of the other chips in the Amiga. What chip gets which information depends on the multiplex signals generated, but by combining many signals on to one set of wires the computer is kept both cheap and reliable. You do want a cheap, reliable computer, don't you?

BECAUSE all of the Amiga's functions have to be carefully synchronised, the controls of the various chips have to be run from one source – Agnus.

Another way in which Agnus keeps the computer running smoothly is by controlling the clock. Most of the circuits in the Amiga are synchronous; they do their business in time to each other. Railway carriages are synchronous because they are all driven from one engine; a convoy of Ford Sierras taking a set of sales executives to a wingding is asynchronous – individual drivers can decide to pop into a service station or do 120 mph instead.

In a computer such as the Amiga, all the different functions have to operate in step, and the signals they get to keep them that way are all sent from Agnus.

The video bits of Agnus are clever in their own right. Because Agnus controls all the DMA (Direct Memory Access – doing things to the contents of memory without getting the processor involved), it is the perfect candidate for the job of moving bytes around video memory, a job also known as blitting.

Blitting is a tricky business. On a plain, toast-with-no-Marmite flavoured computer, moving images around the screen is a matter purely for the software. Somewhere in memory, a set of numbers corresponding to the shape to be moved is stored. These are copied to the addresses in memory that are displayed at a certain position on the ►

screen.

When the image has to be moved the numbers have to be copied to the new area in memory, and the old image erased. All this has to be done by the alter memory commands in the processor, and during the time this takes no other processing can be done.

With blitting, the picture to be displayed is held in a part of memory, as before. But the process of moving it is left to the display hardware – all the processor has to do is give enough information (like the start position, the end position and the boundaries of the area to be moved) and it can go away and process something more important like the inside tentacle measurement of the next alien to appear.

Once the blitter has been given its instructions, it converts them into memory addresses and timings, and proceeds to move the data through memory by reading information from one address, storing it, and then writing it to a new address. Then it does the same for the next address. But what is the next address? How does the blitter convert from the information given to it by the programmer to real memory addresses?

The conversion process can take a certain amount of maths, as the relationship between a data pattern in memory and the position of the resultant picture on screen is a complex one. Hence the Copper within Agnus, a co-processor that can do a very limited but very relevant number of mathematical operations on image-related numbers.

IMAGINE you had a bit of graph paper with a circle drawn on it, and you had to write down the maths to draw a similar circle on another part of the paper. That's the sort of calculation that has to go on when Agnus is blitting.

All of the different functions that Agnus controls go into the biggest block on page A-17, the ram address encoder. This decides from all the information provided from all the rest of the Amiga circuitry (Denise would like the next byte of information for the current window now, Paula needs to get the next four bytes of sound data for voice three) what the actual numbers to throw at the ram chips should be.

There are a lot of things to consider – Paula has been programmed to use such-and-such an area of memory, and if the chip is so far into producing a sound then it needs to get information so far from the beginning of the area – but all of them have to be turned into address numbers which the MUX can convert into row and column addresses for the ram chips.

In the end, Agnus spends its time converting numbers from those which are convenient for the programmer, and the custom chips which the programmer controls, into the addresses which the ram chips can understand.

It's a dirty job, but someone's got to do it.



A screen created for the BBC using some hackers' artwork and Photon Paint

Getting the picture

Video Video ... something else to do on your Amiga. DJ Morgan-Walker entertains the High Street

WHAT can you do with the Amiga's graphics apart from amaze your friends? It was a question I asked myself the other day, while sitting in the local video store, watching the trailer tape of new movies. Then it came to me. The trailer didn't have any special titling. What would it be worth if I could customise the tape for the video store, just as a little project to while away the evenings

The first thing to do is make up the Amiga images. There are plenty of ways of doing this – you probably have a copy of Deluxe Paint. Like all creative things on the Amiga, the important rule is to practice and know what you are aiming for. In my case it was simple text titles. So, the first thing is that you can sacrifice colour for resolution – 32 colours may be impressive, but when someone's trying to read text it's just confusing. The best mode to go for is 16 or 8 colours and 640x200.

So load up your Deluxe Paint and set it for that resolution. Now pick your font. Don't pick a small font like Topaz-8 or 9. Remember that this picture is going to have to be read on a normal television display. If possible, work on a composite colour monitor. Or better still work on the display you are aiming to use. Don't judge the display by what you get on an RGB monitor, as this can mislead you into thinking something is clearly drawn, when on a TV it'll smear and smudge.

For your first title, practice not on the black background that Deluxe Paint gives you, but on a light grey background. Why? Well, when you display on the TV screen, you won't rely as much on the colour and sharpness of the TV and the display will look much better.

Until you are confident, a good idea is to use the Grid feature in Deluxe Paint. This will help you line up your text. Now choose your text colour, but don't choose white, for the same reason that you don't use black for a background.

Before you put any text on the screen, press F10 to remove Deluxe Paint's menus. It'll give you a better idea of the finished picture.

YOU can now type in the text. If you don't position it correctly, use DPaint's brush facility, cut out the text, move it somewhere else and delete the old text. It's easier than brushing out the old text and retyping it.

Once you have the text on the display use DPaint to add some graphics of your own. Electronic Arts sells a library disc with a lot of ready made artwork. Keep it simple though

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and don't clutter up the display. Thanks to most software designers using the IFF format for storing pictures, there are public domain discs with graphics you can use too, in fact you can use graphics generated by most Amiga programs.

There are plenty of other ways to get a good picture on the screen. Deluxe Paint II and the more advanced paint packages like Photon Paint come to mind immediately. The technique is basically the same for these packages, but you can do "special" effects like perspective lettering much more easily.

Always make sure that the text is still readable when you do this – you might know what it is meant to say, but half a dozen pixels at the end of the line of text usually doesn't mean much to most people. And be careful to make sure that your text doesn't melt into shaded backgrounds.

If you want to get even better text, it may be worth looking at a dedicated titling program like TV*Text from Zuma. TV*Text is designed just for titling so don't expect fancy brushes or spray paint here. What TV*Text does have is its own range of fonts, like 'fast' and 'swiss', and these are available in a much larger size that traditional Amiga fonts, even up to 102-Point.

WITH TV*Text, you enter the text, then the program treats it in a manner you select, for example, with a black edge, yellow body and a black shadow cast on the background. You can then position that text on the screen. The TV*Text lettering looks very professional, and you can save the pictures in IFF format to pick them in any of the paint packages.

You are going to need the A510 modulator for displaying pictures on the TV set, but you aren't going to use the modulator output. You are going to use composite video. That is the signal which comes out of the phono connector on the left side of the A510, marked Video out. You'll need a to go from there to the Video in socket on the back of your video recorder.

We are using the composite video to improve picture quality. If we used the TV output of the A510, the signal from the Amiga would have to be encoded and decoded twice (once by the A510 and the VCR and once by the VCR and the television). Using the composite video eliminates one of those stages and improves the picture.

Connect up your television to the VCR as normal, and set the VCR to display the picture from the Video in socket. You should now get your Amiga display on the TV, via the VCR. You are ready to roll.

By now, you should have put together a selection of pictures you want to display. The Amiga offers a number of ways to display them for recording. Slideshow is a shareware program which can pick up IFF pictures and display them by fading the images in and out or rolling the picture on to the display.

Using this basically consists of copying all the images on to a disc with the program, creating a text file of commands which will tell Slideshow which pictures to load and how to put them onto the screen, then running those commands. With Slideshow, there's usually a file of documentation, so read that for more detail.

But Slideshow is only the start of what you can do. One presentation technique you can use is displaying the pictures and text through a 2D animator like Aegis Animator or Fantavision. Using these programs, you set up the animation so that it loads in your pictures, and then does some animation over the slide. Add a logo and make it rotate while the slides change, or animate a pointer to pick out text. The drawback here is that many of the animators don't allow for sliding or wiping backgrounds.

PROGRAMS like Deluxe Video do allow for this, though they are harder to get "instant" results than are the animators. But, as ever, the more work you put in the more impressive the results.

So, we have covered here how to use your Amiga as a video source, to generate graphics. What we haven't covered is mixing the Amiga's video with other video sources – which we'll get to in a future article.

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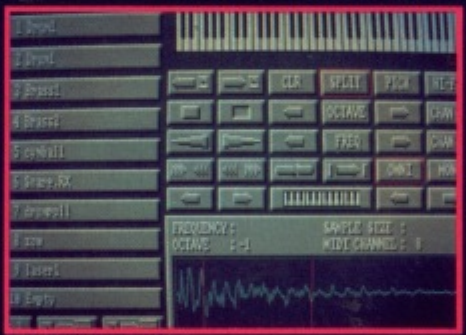


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COPY's a real power pack



Phil South delves deeper into the workings of the Amiga's OS, and checks out some useful file utilities built into AmigaDos

AMIGADOS is a multilayered beast, sitting as it does between the machine and Workbench. First it is the operating system of the Amiga, calling all the shots at machine level to get the machine started and running once it's up. Second, it's open to commands from a Command Line Interface, our friend the CLI. It is also the only means by which you can edit, exchange and generally twiddle with files on disc.

Although this is a tricky thing if you are used to an entirely window oriented system like the Macintosh, it has to be learned. But to be honest they've been doing it this way for years, and there's a good reason for that. Files on an Amiga disc can be moved around in all sorts of ways, and the AmigaDos bit in the manual makes all kinds of references to the power of AmigaDos in handling files. OK, so what are these powerful features?

COPY is a good example. You can COPY a file to another disc, or another directory on the same disc, sure. But did you know you can COPY a file to the printer? Or to a window on the screen? Or indeed to any device used by the Amiga? This is all part of the Amiga's open architecture.

All functions of the computer, due to the fact that locations in memory are not exclusively for the use of any one part of the operating system, are ASSIGNed to logical devices, as I've said before. But another brilliant piece of design means that you can use the same call to any device and get a different result. COPY a file to window:

```
COPY filename TO CON:10/10/200/100/
```

and it prints up in the window defined by the CON:. COPY a file to a printer, the same statement notice:

```
COPY filename TO PRT:
```

and it prints it up on your Preferences printer.

But the same structure goes for the redirection of data streams. This is something you'll be more interested in when we all get the PIPE: device in WB1.3, but for now the redirection of files and data is governed by the <> symbols, usually referred to as "angle brackets".

And lo and behold, what do we find but the same sort of file handling ease:

```
DATE > filename
TYPE filename
```

sends the DATE stamp to a file called 'filename' and then TYPEs it up on screen. How about this one:

```
DIR > catalog
```

dirs the current directory, and instead

of sending the file to the screen, stores it in a text file called 'catalog'. You could make a file of all your disc catalogs this way. Another of these fancy file utility commands is called JOIN. This is a much more complicated command, which cleanly and simply joins, or concatenates, up to 15 files like so:

```
JOIN disc1 disc2 disc3 disc4 disc5 AS
disclist
```

This is not to be confused with LINKing, a process you encounter in writing programs with compilers and the like, but nevertheless it is a powerful command for the handling of loose text files.

And talking about text files, most of you will use TYPE in the same way as it is used on a PC, to flash the specified text file on the screen in a generally quick and dirty fashion. But did you also know that you can TYPE a binary file too? Yes, how about this little number:

```
TYPE .info opt h
0000: F34C0012 00000F39 00000258 00000B61 .L.....9...X...a
0010: 45787061 6E73696F 6E0A436C 6F636B0A Expansion.Clock.
0020: 5368656C 6C0A5072 65666572 656E6365 Shell.Preference
0030: 730A5574 696C6974 6965730A 53797374 s.Utilities.Syst
0040: 656D0A45 6D707479 0A547261 73686361 em.Empty.Trashca
0050: 6E0A n.
```

Interesting, huh? It gives you a hex rendering of the file, plus an Ascii dump down the side. So that's what's in that .info file, eh?

FINALLY, a command which doesn't see much use in the CLI is SEARCH. With this you can search directories, subdirectories and text files for strings. I used it the other day with the Fish Disc Catalog. The catalog comes on disc and finding a program can be hazardous to your health. The most useful reason for using SEARCH rather than flipping through by hand is that there might be an update to the program you're looking for later on in the disc.

You can get SEARCH to look for ALL entries of a string on the disc, from all directories, and log the searching into a text file by redirecting the output from the screen to a file marked "searcher" or something. Then you can go out for bite, watch TV, or even run it as a background task as you use another program.

● *If there is anything you would like to see explained in depth. please write to: Plain Man's Guide, Amiga Computing, 78-84 Ongar Road, Brentwood, Essex, CM15 9BG – but remember we can only answer questions through the pages of the magazine.*

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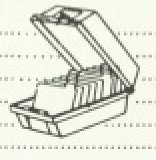
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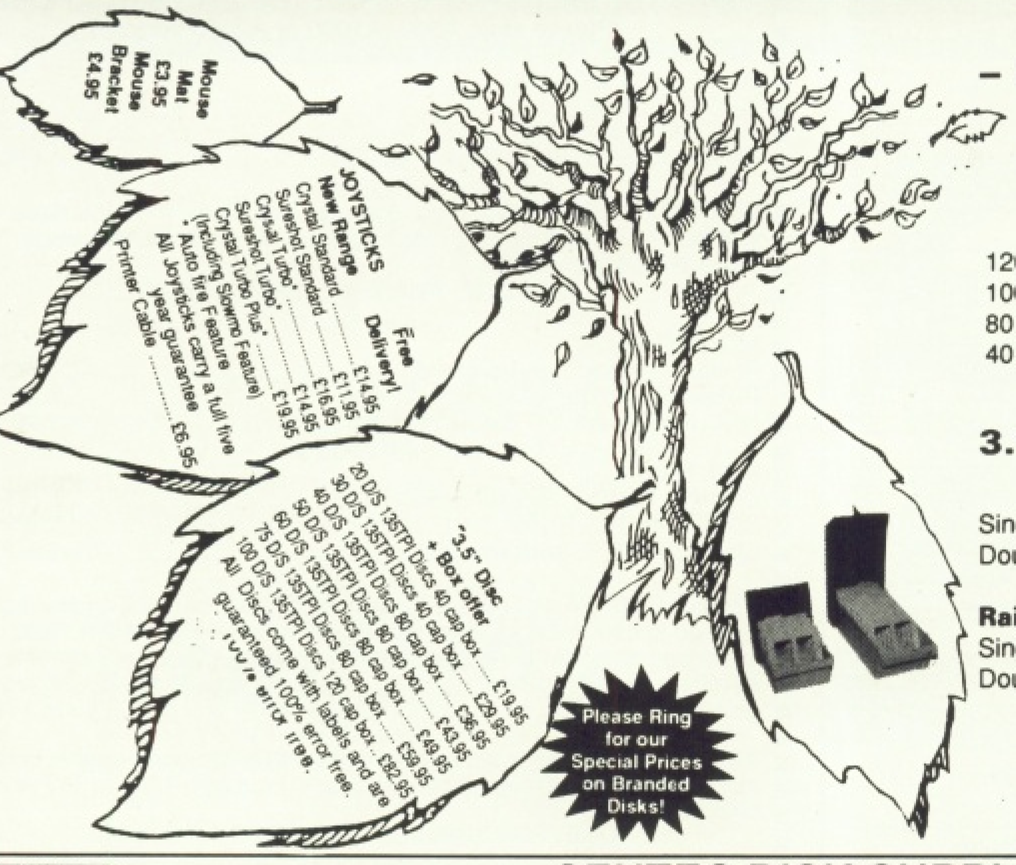
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AMIGA Letters

Starglider quirks

I HAVE been playing Starglider II since it first came out and have found a couple of quirks. If you fly out of the Solice system and keep going you come to a second solar system. This is a reflection of Solice, with everything working backwards. It takes about an hour to reach this reflected sun and doesn't seem to offer any advantages.

Another "feature" of Starglider II is a timewarp in Paint with Rolf. If you type all nines you get the message "Timewarp A 0B 02". I suspect that this is a game killer mode but can't get it to do anything. Incidentally, my local shop said that they only had Atari ST copies but after reading about the ADLS disc format in your magazine I bought what they said was an Atari disc and it worked perfectly on my Amiga.

Marc Bladon,
Wilts.

Sound advice

WHENEVER I reboot the Amiga the 1084 monitor shows blurred black lines across the screen. Is this normal? I am also having problems with the synthesiser voice. The output is locked on a robot's voice. Should I take my machine back to the shop?

Mohammed Saeed,
Bradford.

Try looking at another machine. The Amiga cycles through dark red, dark grey, light grey, red, green, blue and yellow on power up. These will identify a fault to an engineer if the screen freezes on a colour.

Black lines over the hand which asks for Workbench is a fault which should be looked at. Your speech problem is more puzzling. If the robot voice works then all the voices should. Experiment with the SAY command from Basic. We suspect you will find that you have mis-read the manual.

Machine code only

I RECENTLY bought an Amiga 500 and want to start programming in assembly language using Intuition. However I can't find any books which explain how to use Intuition in assembler. I know 68000 already, so I don't need an Introduction. Why don't you have book reviews as a regular feature?

Jagbir Lally,
Wolverhampton

You'll find that we have assembled a panel of expert book reviewers and intend to feature as many reviews as we can. The Addison Wesley books are an essential purchase for the serious programmer. A cheaper alternative is Kickstart from Ariadne (01- 960 0203) or Compute's Guide to AmigaDos. Many of the advertisers in Amiga Computing *are good at recommending books which suit specific needs.*

Goodbye cruel words

I HAVE just finished reading the review of Kind Words, the low cost word processor. I have been using the program for two weeks and up to now cannot say I have found any real fault with it.

I suspect that Mr Tomlins was expecting too much from this program. As a word processor it is very good. In my opinion better than either Textcraft or Scribble; that is not just my opinion, several of my colleagues have the same view.

The most important thing is that it is low cost. The Disc Company has produced a word processor which does not burn a hole in the pocket. I know of at least half a dozen people who have bought this program.

It is very easy to use. I have used WordPerfect, and it took me at least two days to read the manual. The two programs cannot be compared. How Mr Tomlins even dared mention such an expensive program in his review I cannot understand.

It is unfortunate that everyone compares products to industry standard programs like WordPerfect and Lotus 1-2-3. I feel that everybody has their own opinion as to which one they like to use.

I think that the only way to get a fair review of any business program is to let several people try it out for a few weeks, then and only then can an honest review be made.

I rate Kind Words very highly. The manual is very well set out. I agree that perhaps there should be more tutorials to help the first time user, but if one tries each command in turn it soon becomes quite easy.

I use the program with 1Mb and a second disc drive, and everything works to my satisfaction. The most important thing is that the program has got is the SuperFonts with the 1.3 printer drivers.

I am very impressed with the quality of the printout whatever the printer I use. So far I have tried the Citizen 120D, Amstrad DMP 3000, Star LC10 and Epson RX80. I must admit that it can be a very slow process to print out a whole document, but this is not such a bad thing. I believe that further drivers will be coming out soon.

I have found one or two minor problems with the graphics, but having this facility in the first place is a real bonus. The main reason I bought Kind Words was the spelling checker, which I have found to be not only one of the best I have tried but because it resides in memory it is also one of the quickest.

Mr Tomlins gives the impression that he doubts that it really does contain the claimed 90,000 words. I think his suspicions are unfounded. I have found Kind Words to be very good value for money. Of course this letter was written using Kind Words.

J.B Palmer,
Havant

Expensive Amiga

IT seems to me that there is a prevailing prejudice among companies which support the Amiga in terms of both hardware and software that if you can afford to buy an Amiga you can afford to pay the top price for anything else you need to build up your system.

It seems a pity that when Commodore lowered the price of the Amiga the supporting companies did not follow suit.

Peter Whitaker,
Hull.

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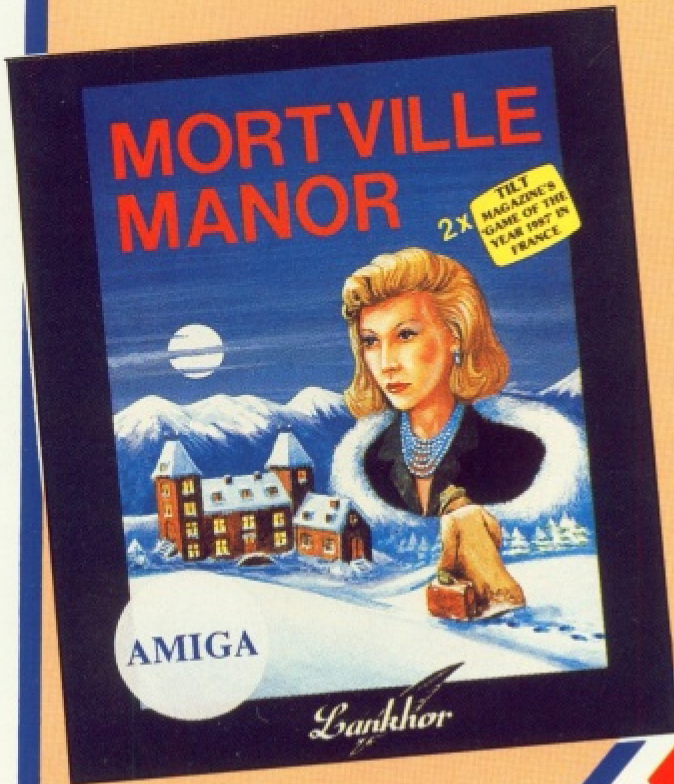
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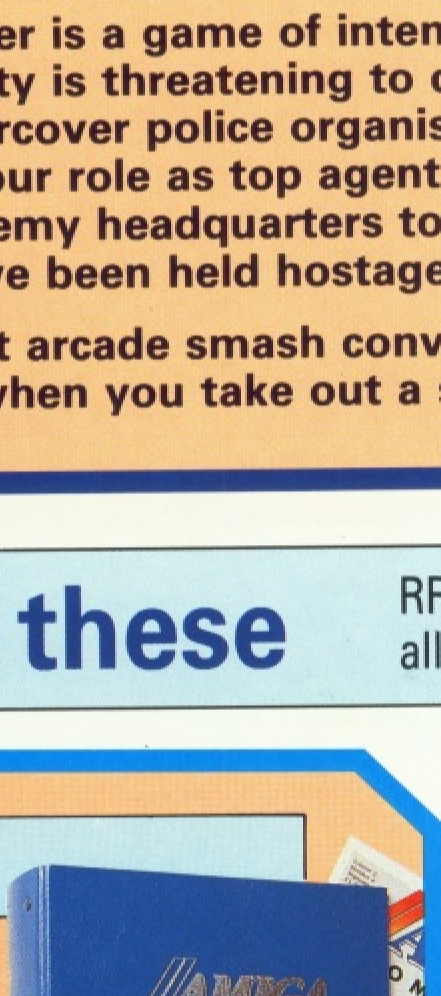
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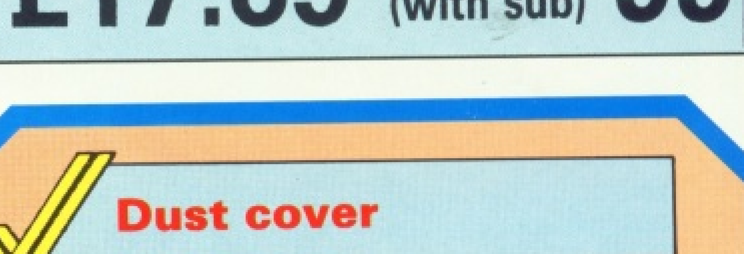
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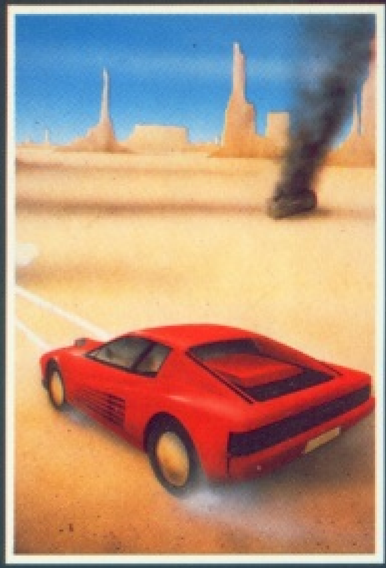
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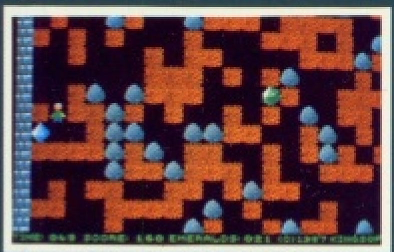
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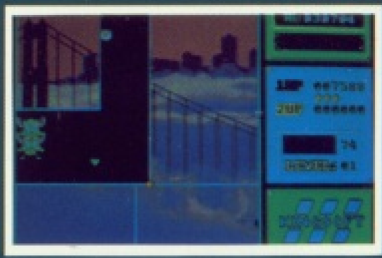






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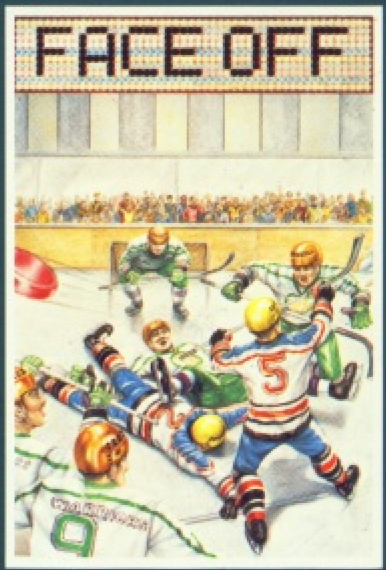
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